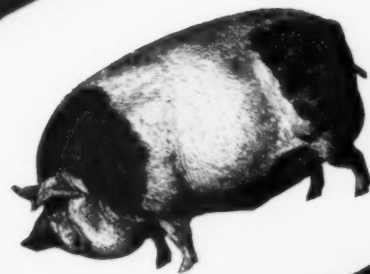


# MODERN PACKAGING

FEBRUARY 1954



IN THIS ISSUE

Exhibiting in the new modern way

and the new modern way

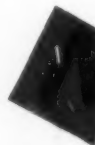


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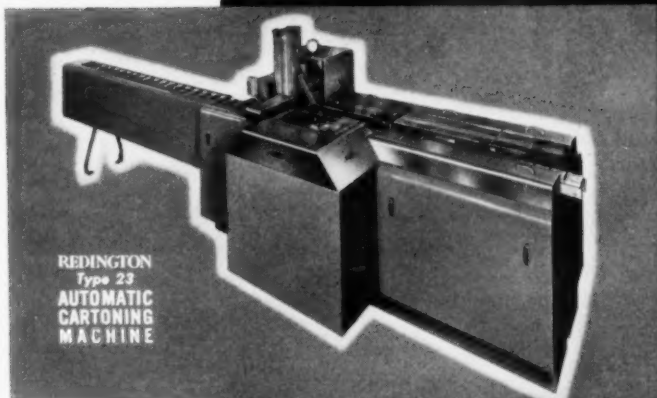
FEBRUARY 1954

# MODERN PACKAGING

February 1954, Vol. 27, No. 6

<b>The check-out drug store</b>	<b>83</b>	<b>A program for parts</b>	<b>119</b>
It sells almost everything, including drugs, and it offers both a challenge and an opportunity for packaging.		Reo draws on automotive-industry experience to organize orderly packaging for its power lawn-mower service parts.	
<b>A quick-change labeler</b>	<b>90</b>	<b>Self-partitioning carton</b>	<b>122</b>
First National's new automatic machine, one of the first of its kind in this country, has some unusual features.		Stamped from a single piece of corrugated, it sets up for G. E. into an exceptionally strong 10-cell shipper.	
<b>Ultra-low-pressure aerosols</b>	<b>92</b>	<b>Display Gallery</b>	<b>124</b>
A new Zonite principle permits the use of unprotected glass, thereby opening the field wide to toiletry products.		Jell-O's shelf-display technique . . . fireplace floor display . . . cosmetic promotions by Cutex and Bourjois.	
<b>Dripless wine</b>	<b>97</b>	<b>Tagged as a gift</b>	<b>126</b>
Rona solves an age-old problem with a polyethylene collar fitted into the pouring lip of a conventional bottle.		Red-ribboned corrugated container for kitchen ware does a year-round, self-selling job for Lincoln Metal Products.	
<b>Meat</b>	<b>98</b>		
The packer has become a packager and now sells 23 billion pounds a year, taking 24% of the average food dollar. A MODERN PACKAGING Industry Survey.			
<b>Self-selling hardware</b>	<b>105</b>		
With visibility packaging and "do-it-yourself" display, Yale & Towne makes night latches an impulse item.			
<b>Design Histories</b>	<b>106</b>		
Purse-size squeeze bottle for dietetic sweetener . . . five unit packs in 1-lb. cracker carton . . . camera lens in elegant gift box . . . dispensing tube for permanent-wave solution.			
<b>Vacuum-formed plastics</b>	<b>108</b>		
New techniques in their production and use are opening up vast new low-cost fields of application in packaging.			
<b>Packaging Pageant</b>	<b>114</b>		
Aunt Jemima cake-mix redesign . . . eye appeal for drain-hose package . . . low-cost put-up for children's socks . . . other ideas of the month.			
<b>Kodak's universal pack</b>	<b>116</b>		
Analysis of 3,000,000 samples proves efficiency of special foil wrap for both domestic and tropical film.			
		<b>Technical</b>	
		<b>Meat-packaging criteria</b>	<b>131</b>
		A review of recent developments in methods and materials, with new comparative test data. By JOHN M. RAMSBOTTOM.	
		<b>Polyethylene for citrus</b>	<b>135</b>
		Film as a package depends on quality of fruit, rapid movement and ventilation. By HOWARD W. HRUSCHKA and J. KAUFMAN.	
		<b>Questions and Answers</b>	<b>140</b>
		<b>Departments</b>	
		<b>Equipment and materials</b>	<b>142</b>
		<b>Plants and people</b>	<b>152</b>
		<b>For your information</b>	<b>170</b>
		<b>U. S. patents digest</b>	<b>176</b>
		<b>Manufacturers' literature</b>	<b>181</b>
		<b>Index to advertisers</b>	<b>212</b>

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Type 23  
AUTOMATIC  
CARTONING  
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MODERN PACKAGING is regularly  
indexed in Industrial Arts Index.



# MODERN PACKAGING

## Let's cut the confusion

ONE OF THE FASCINATIONS of packaging is the way it brings together so many diverse industries. It is a field in which are joined the pulp and paper, the plastics, the glass, the metal, the printing, the machine and the chemical industries. But because each of these industries has over many years developed its own trade terminology, the groping for a common language in packaging often becomes confusing and contradictory.

Where custom is ingrained, the job of getting agreement on common terms is one requiring great patience and perseverance. The Packaging Institute deserves recognition for having taken leadership in this task through its *Glossary of Packaging Terms*, the second—and much improved—edition of which is now in preparation.

But where new terminology arises in connection with new materials and processes, the time to cut out the confusion is right then and there.

We have in mind the present situation in which polyethylene-coated materials—papers, films and foils—are coming rapidly to the fore. In many quarters these materials are still referred to as laminated and the average packager is confused.

The confusion is understandable, although not excusable. The extrusion coating process, with polyethylene, produces a material that looks and functions like a lamination. And in the distance of 4 or 5 in. between the extrusion head and the base web, the polyethylene is, for a split second, a film. But it combines immediately with the base stock while still molten; it is never a separate and distinct and self-supporting entity.

Let's agree on this: (1) lamination is the bringing together of two or more distinct and independent webs; (2) coating involves a single web on which is deposited a dependent material—which can be any one of many types.

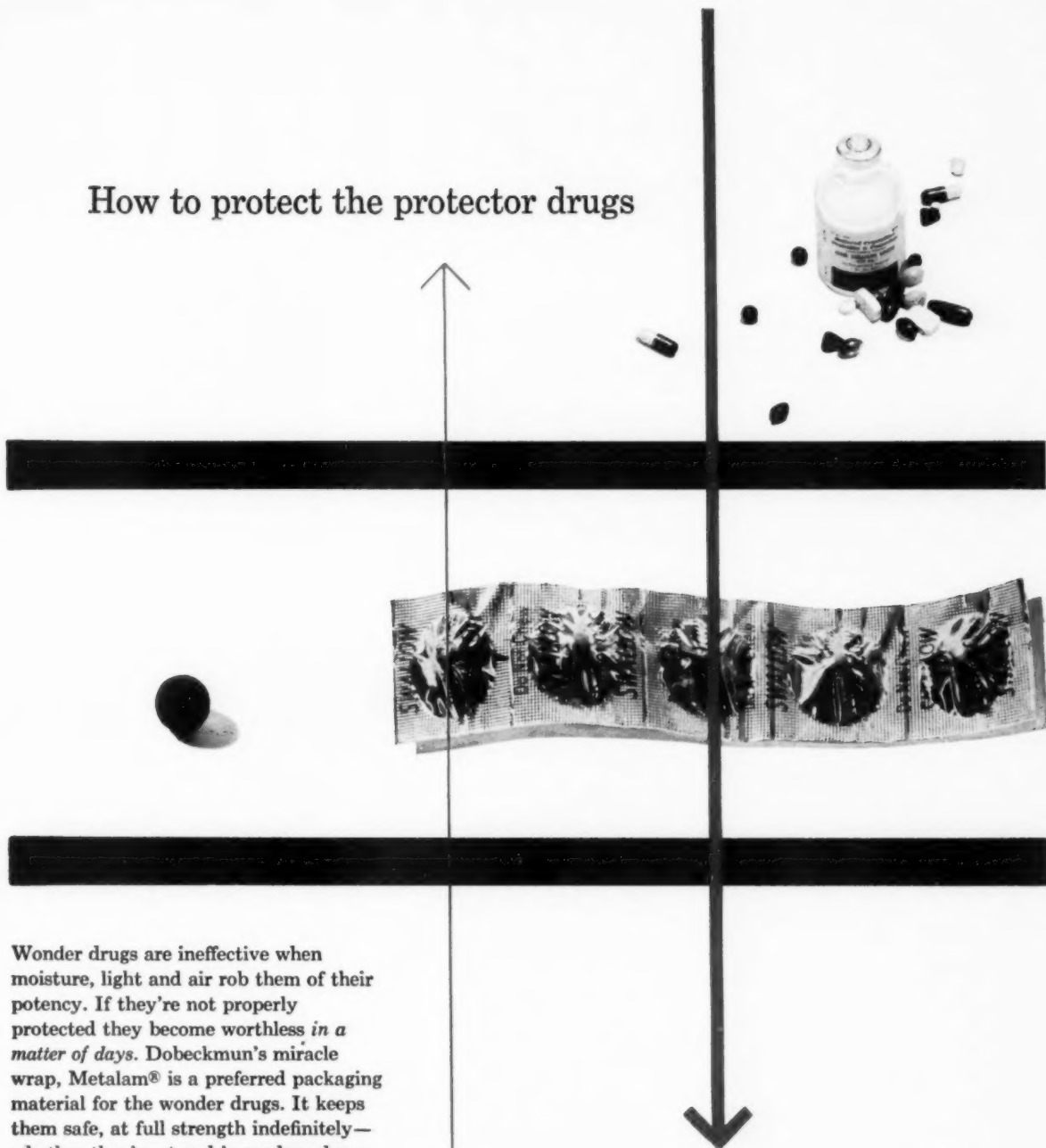
The distinction is important and should be made clear, because both laminated and coated materials are being produced and used, and for many uses they are interchangeable. It is, however, a form of misbranding to call a coated material laminated, or a laminated material coated. The user has the right to know.

*The Editors*

MODERN PACKAGING



## How to protect the protector drugs



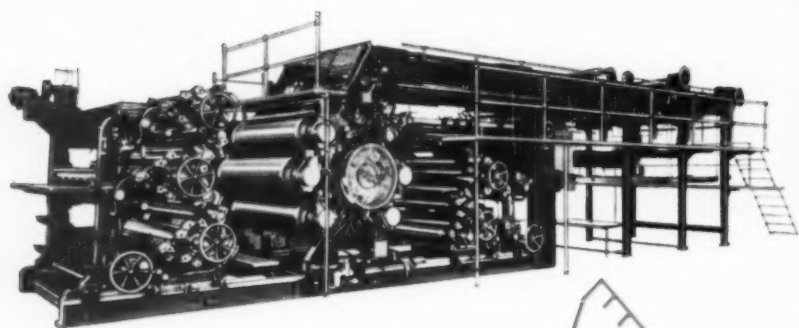
Wonder drugs are ineffective when moisture, light and air rob them of their potency. If they're not properly protected they become worthless *in a matter of days*. Dobeckmun's miracle wrap, Metalam® is a preferred packaging material for the wonder drugs. It keeps them safe, at full strength indefinitely—whether they're stored in modern drug warehouses or in Mrs. Jones' medicine chest. Metalam does the same protective job for hundreds of other products—including ethical drugs, powders, lotions, creams, pills and sterile dressings. The material comes plain or multicolor printed, to help you protect and sell better. Get in touch with us. We have packaging specialists in cities from coast to coast.

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**Another new development using**

# **B. F. Goodrich Chemical** raw materials



B. F. Goodrich Chemical Company does not manufacture these Baby Bottle Bouncers. We supply the Geon paste resin only.

## **Baby's bottle bounces...won't break!**

**Y**OU have probably seen a baby give his bottle the heave-ho—then crash! Dropping milk bottles is so universal that a smart manufacturer has perfected this baby bottle bouncer, precision molded from a plastisol based on Geon paste resin. Drop it and the bottle bounces, unharmed. It gives baby and mother a safe grip, and also acts as an insulator to keep milk at the proper temperature. The bouncer can be boiled or kept in a cold refrigerator without being affected. Comes in 4 baby colors.

You may spot an idea in this new development that shows you how Geon-based plastisols can help you improve or develop saleable products. For example, as packaging for containers of acids, solvents, etc., used in laboratories or in shipping. These plastisols, and other Geon materials have helped build sales for a wide variety of products, from upholstery and wire insulation to rigid piping and even nuts and bolts. Talk over your problems or requirements with us. We'll help you select the Geon mate-

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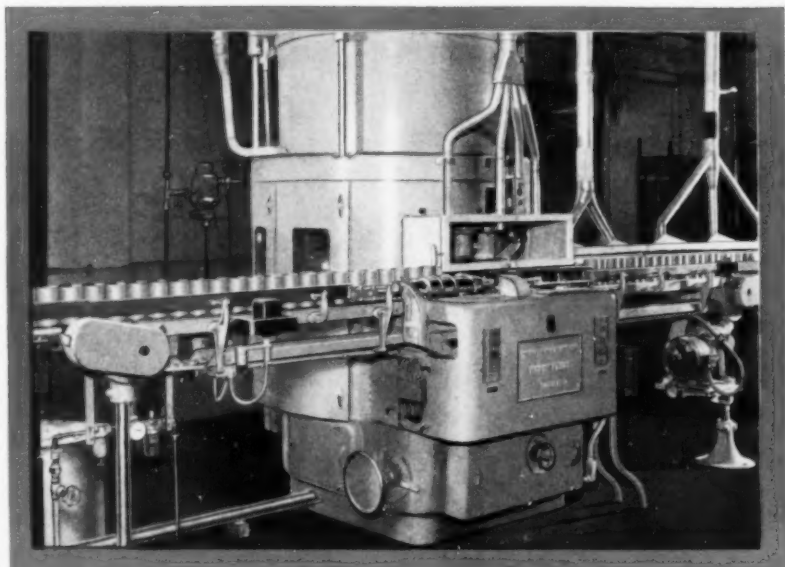




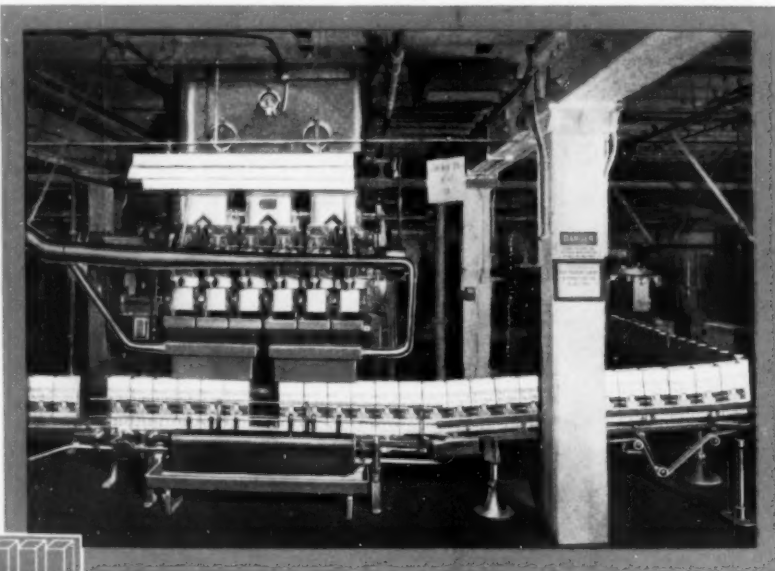
*Rotary Vacuflow filling machine in operation at Los Angeles Soap plant.*



*Weighing operation on one of several soap product packaging lines made up of Pneumatic machines.*



**PNEUMATIC is a star performer  
in this West Coast production!**



### ***Packaging and Bottling Equipment***

PNEUMATIC SCALE CORP., LTD., 82 Newport Ave., Quincy 71, Mass. Also: New York; Chicago; San Francisco; Los Angeles; Seattle; Leeds, England.

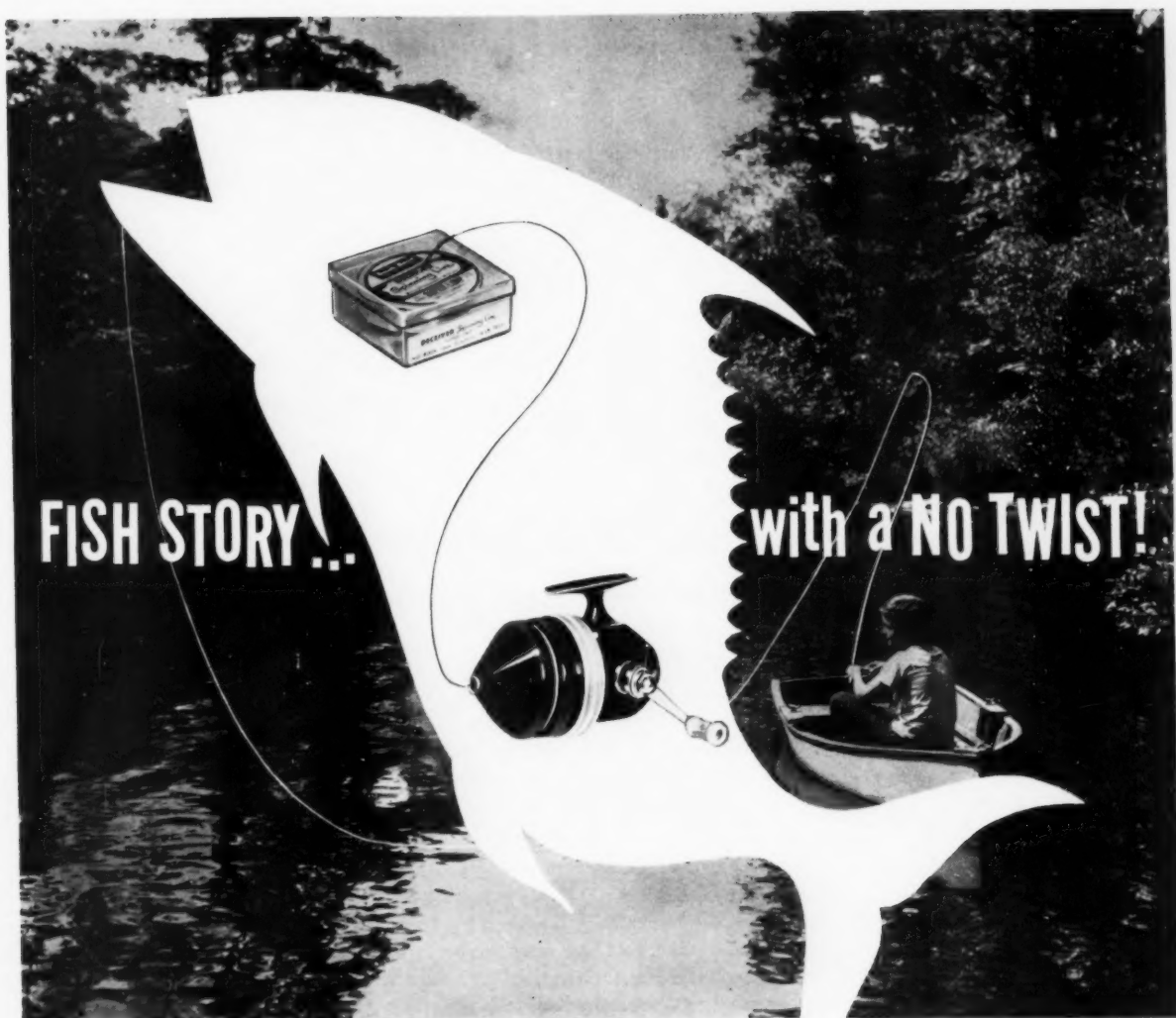
PNEUMATIC, in fact, has been in a starring role at the Los Angeles Soap Company plant for over twenty-five years.

The makers of Scotch Foam Action Cleanser and the extensive line of White King soap products have found that Pneumatic machines fully deserve top-billing, when it comes to performance in their several production lines.

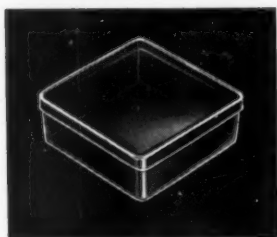
Like all Pneumatic equipment, each of the illustrated machines is designed to do its particular job at money saving "Lower Cost per Container". The 16-Head Rotary Vacuflow unit accurately fills the Scotch Cleanser cans with the fine scouring powder, at high speeds. On another line, White King soap powder is weighed into packages by the 6-Head Net Weigher which operates with the kind of efficiency that only Pneumatic's top caliber engineering and precision manufacturing can produce.

In striving for packaging or bottling perfection, you'll come closest to it with Pneumatic equipment.

**MODERN PACKAGING**



## Tri-State Rigid Plastic Box creates a TWIST-FREE PAK\* for SOUTH BEND SPINNING LINE...



Tri-State Rigid Plastic Box, No. 06, 2 7/8 x 2 7/8 x 1 1/4", is just one of a huge variety of stock sizes and shapes that will fit your product — or we will mold to your specifications.

South Bend Bait Company will really reel in the anglers with this exclusive new Twist-Free Pak! Because the fine monofilament nylon line winds directly through the hole in the lid of the Tri-State rigid plastic box... right onto the reel, it can't twist, can't snag, can't get the angler in a snarl!

That's just one "sales bait" bonus of the new Tri-State package. The dust-free, moisture-proof plastic box

keeps the contents fresh, flexible and "fishable"... lures the customer as he looks in. And the re-usable container is a paradise for all sorts of fisherman paraphernalia.

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\*Patent Pending

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FEBRUARY 1954

11

# The Greatest Reason Why

**the Reynolds Wrap Aluminum Packaging Seal means so much to more and more women!**



REYNOLDS WRAP itself is, of course, the first and greatest reason why the Reynolds Wrap Aluminum Packaging Seal means so much to more and more women. REYNOLDS WRAP is what they use to keep foods fresh at home. Women believe—and rightly—that Reynolds Wrap Aluminum Packaging is the finest protection known to science. And they're glad, now, to see this protection clearly identified.

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Watch For National Consumer Magazine Advertising On The Reynolds Wrap Aluminum Packaging Seal... continuing a great program already on TV. Full pages in four colors starting with February LADIES' HOME JOURNAL, FAMILY CIRCLE, WOMAN'S DAY and February 8, LIFE.

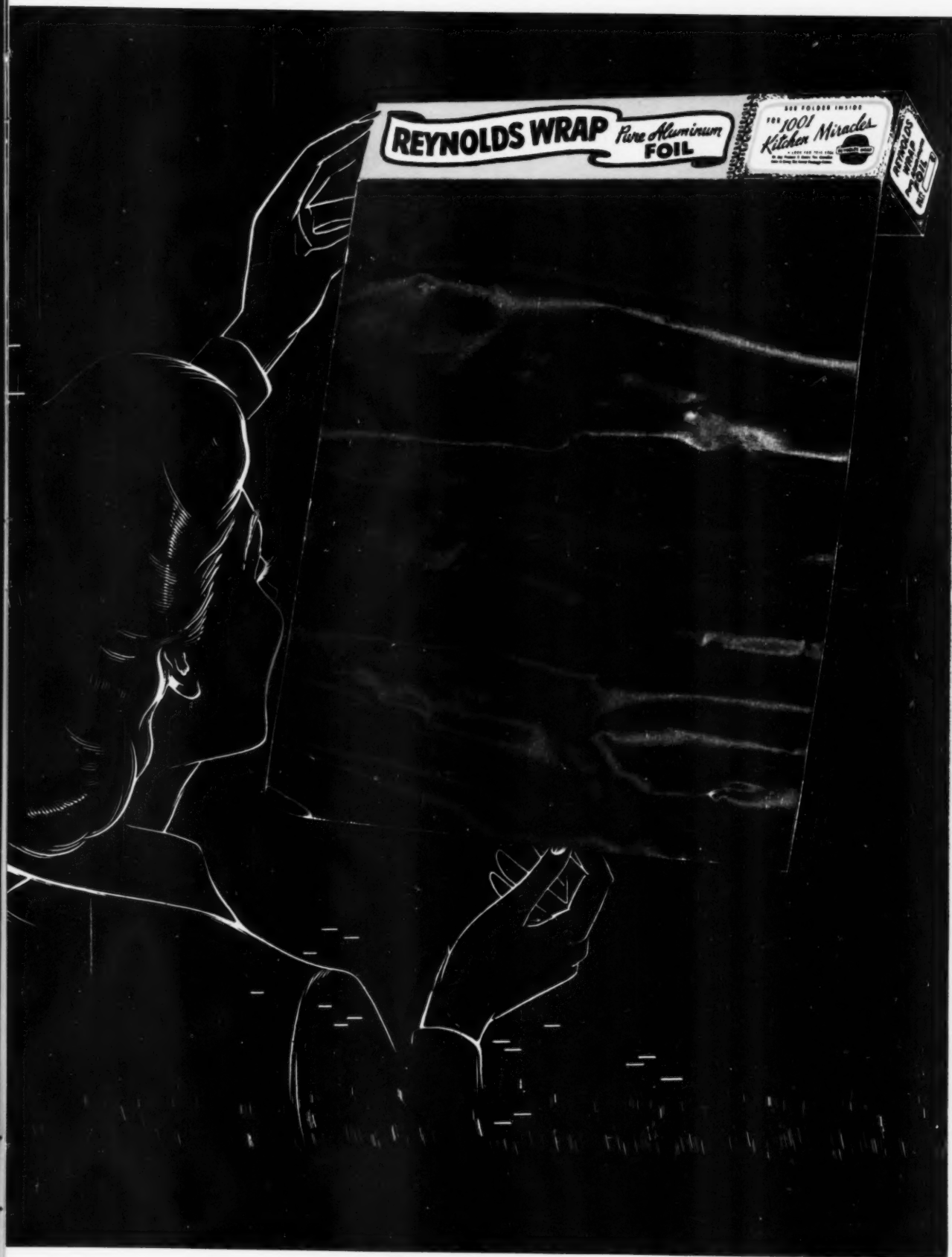


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So often it's the container that does the convincing!  
That's why rich-looking lithographed cans are  
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an ALL METAL container can give. Sell your product  
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There are many stock cans to choose from—  
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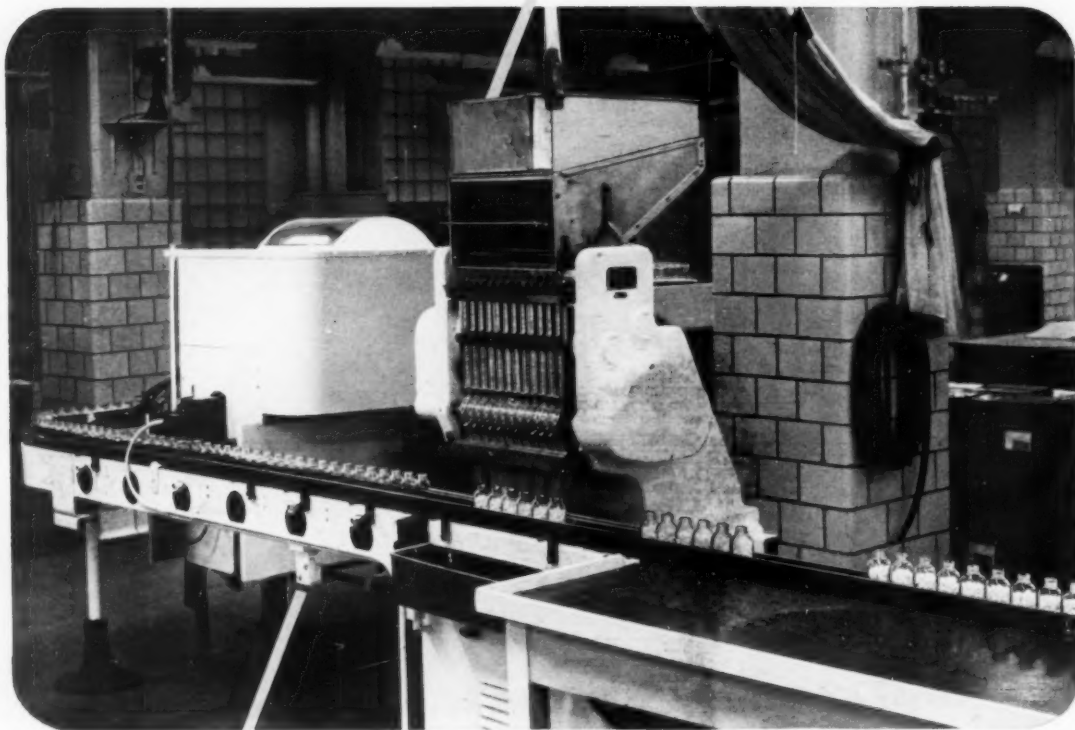
LET US HAVE YOUR INQUIRY

*Quality* **OLIVE CAN COMPANY** *Service*

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CONTAINERS**

again the choice is **US**



**Model TBS Automatic Fills 160 Empirin 25-Tablet  
Bottles in a minute at Burroughs Wellcome!**

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Model TBS Automatic Tablet Filling Machine in the 12 chute model will fill bottles, cartons or cans with any desired number of pills, capsules or tablets—counting and inserting them at rates of 160 per minute on 25 count or less, and up to 100 per minute on larger count containers.

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Milprint Printed  
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Milprint Rotogravure Printed  
Cellophane Overwraps



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**DESIGN** . . . in the complete line of Dan Dee packages by Milprint! Eye-catching Milprint lithographed cartons have the "pick-me-up" look that attracts and sells every hour, every day, with colorful back-of-carton cut-outs adding sales appeal. Handsome Milprint rotogravure printed cellophane overwraps keep products crispy-fresh . . . with sharp precision printing and brilliant colors that win sales.

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**APPEAL** . . . in glittering Milprint foil bags that preserve flavor and goodness, reflect the merchandising skill of Milprint designers. For the widest variety of packaging materials available anywhere—it's Milprint!

For the fresh approach that increases sales, call your Milprint man—*first!*

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*"- and some Aylmer\* or Wagstaffe\*  
Jam with the new jar top -"*

*Aylmer and Wagstaffe jams, jellies  
and marmalades are famous the  
world over, and now the  
packer has given consumers  
another good reason for  
selecting these fine brands.*



## *... it's the Crown Vacuum Lug Cap!*

This cap has a Slip Rubber Ring which provides a vacuum seal. It gives maximum protection to the product . . . is easy to remove by hand without tools or implements. Because this cap is strong and rigid, it won't lose its shape . . . won't fall off the jar when used as a re-seal

Ask your Crown Representative to give you full information about hermetic sealing with Crown Vacuum Lug Caps . . . THE VACUUM SEAL WITH SALES APPEAL. Crown Cork & Seal Company, Inc., Closure Division, Baltimore 3, Md.

# **CROWN CLOSURES**

*Approved by millions of housewives*



\*AYLMER products are made by Canadian Canners Limited.  
\*WAGSTAFFE products are made by Wagstaffe Limited . . . largest packers in Canada of jams, jellies, marmalades.

How Champion  
designed a new package  
with the help of the  
**G.P.E. and PLIOFILM**



*Bright new Champion Spark Plug Package  
with PLIOFILM overwrap.*

**T**HE Champion Spark Plug Company had long been searching for a new and faster way to package their principal product. With the method formerly in use, unit cost was high, due to the large amount of manual operations.

Research convinced the Company that the right answer was a tray with a film overwrap. Of all the films studied, PLIOFILM was the one selected — and with good reason. PLIOFILM not only provides moisture protection, but its greater strength prevents broken packages. In addition, PLIOFILM's clear transparency helps spark plugs sell themselves.

The change-over was achieved by Champion, The Container Corporation and the Goodyear Packaging Engineer working hand in hand. The G.P.E. converted the packaging machinery used in the operation. He helped set up production lines. He recommended the precise gauge of PLIOFILM needed for the job.

Result: Productivity per man-hour has nearly doubled, while spoilage has been virtually eliminated.

If you've a tough packaging problem, the G.P.E. is ready to help you every step of the way—from basic research to the marketing of the finished product. For more complete information, for further details on the Champion success story, write the Goodyear Packaging Engineer, Pliofilm Dept. N-6418, Akron 16, Ohio.



Good things are better in

*Pliofilm*

3-way protection against air, moisture, liquids  
Pliofilm, a rubber hydrochloride—T. M. The Goodyear Tire & Rubber Company, Akron, Ohio

# NOBODY HAS AS MUCH EXPERIENCE AT MOLDING POLYETHYLENE AS

# TUPPER!

The logical molder for you to consult regarding that product or package of yours which is to be made of polyethylene is Tupper. Tupper has done more than any other molder to make molded polyethylene a practical reality.

Aside from having designed, patented, and promoted successful seals, closures, and dispensers for polyethylene containers, the Tupper Corporation has vast experience in *every phase* of polyethylene packaging and polyethylene injection molding. This experience will be of major importance in improving your product, in reducing your costs, when Tupper goes to work for you.

Tupper's combination of experience, technical ingenuity, and the most modern equipment is at your service for the custom molding of your product in polyethylene. You can do no better than the best ...and the best at molding polyethylene is Tupper!

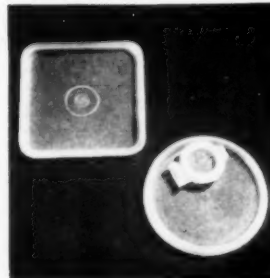
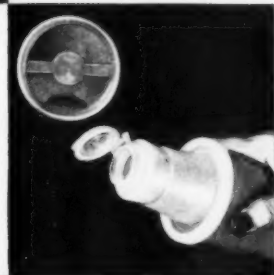
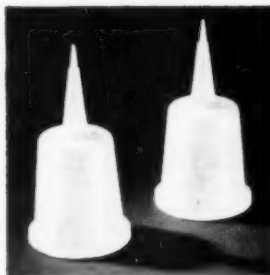
**TUPPER!**  
TRADE MARK

## TUPPER CORPORATION

Manufacturers of — CONSUMER, INDUSTRIAL,  
PACKAGING AND SCIENTIFIC PRODUCTS

Factories, Laboratories and Sales Offices:  
Farnumsville, Mass., Orlando, Fla., L'Epiphanie, P.Q.  
Showrooms: 225 Fifth Ave., N. Y. C.

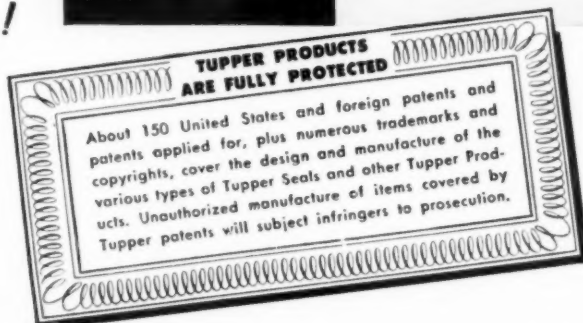
Address all communications to: Dept. MP-2



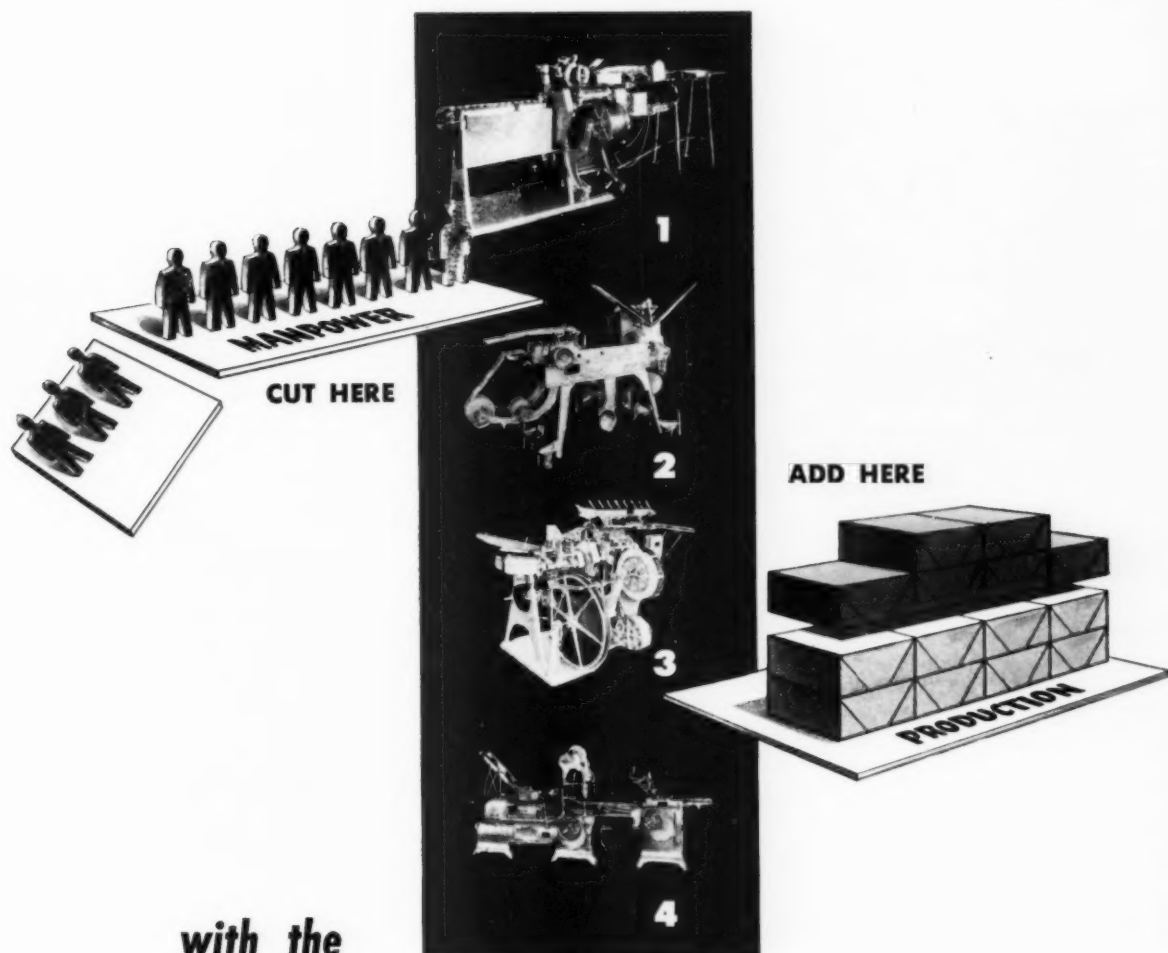
Tupper Seals are air and liquid-tight flexible covers. The famous Pour All and Per Top covers are designed for easy dispensing. They are made in sizes to fit all Tupperware containers.



When equipped with Tupper Seals, Tupper Canisters, Sauce Dishes, Wonder Bowls, Cereal Bowls and Funnels in various sizes are the most versatile reusable containers you have ever seen.







## with the **SIMPLIFIED** design of **LYNCH** packaging Machines

Being a hidden feature, it's easy to underestimate the part *simplification* plays in packaging efficiency. But simplified design, in packaging machines, actually produces big savings. With fewer parts to wear, for instance, there is less down-time—and less-skilled workers can handle the job. Operators and machines are kept busy—*producing!*

It pays to compare—to look for simplicity in design. And it pays to look to Lynch. For more than twenty-five years, continuous research, at Lynch, has produced a long list of features that have led to greater speed, simplified design—*real* packaging efficiency. Put these features to work in your packaging line. Consult with our engineers. No obligation.

1. Model RS wraps multiple-unit packages of round or square sandwiches (peanut butter, cheese, cream, etc.) at a speed of up to 100 per minute. Compensates for normal irregularities in diameter or thickness of sandwiches. Cuts scrap loss.

2. Model SMW makes and wraps soft ice cream sandwiches direct from freezer. Variable speed drive—up to 100 packages per minute. Requires small floor space. Easy to operate and maintain.

3. Wrap-O-Matic, fully automatic. Packages both conventional and irregularly shaped items at high speed. Used for packaging confections, bakery products, pencils, cigars and other products.

4. Morpac Model T Print Forming and Wrapping Machine with K Cartoner. Insures continuous, high-speed wrapping and cartoning of butter, margarine and similar products.

A WIDE RANGE OF ADDITIONAL MODELS AVAILABLE



FAR AIR  
COMPRESSORS



ICE CREAM  
SANDWICH  
WRAPPING  
MACHINES



WRAP-O-MATIC  
CANDY & COOKIE  
WRAPPING  
MACHINES

**LYNCH**  
CORPORATION

PACKAGING MACHINE DIVISION  
ANDERSON, INDIANA

Branches—New York • Chicago • San Francisco  
Los Angeles • Toledo • Atlanta • Dallas • Toronto  
Export Dept.: 13 East 40th St., New York 16, N. Y. • Cables: Arlob



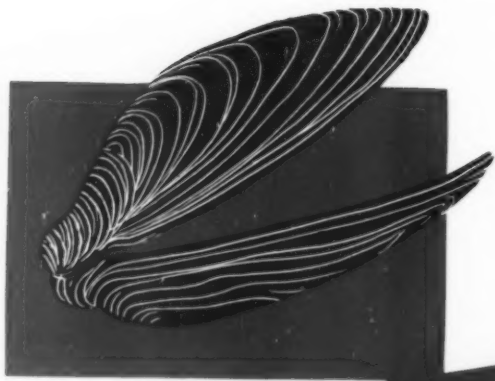
MORPAC  
PAPER PACKAGING  
MACHINES



MORPAC  
BUTTER & OIL  
PACKAGING  
MACHINES



GLASS FORMING  
MACHINES



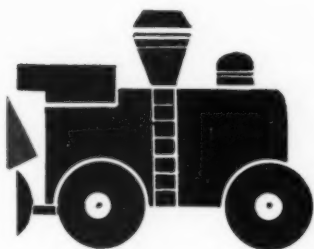
THE CLAM



THE SNAIL



AND THE IDEAL TRAIN...

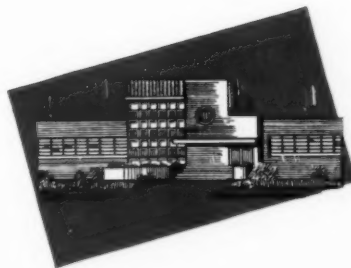
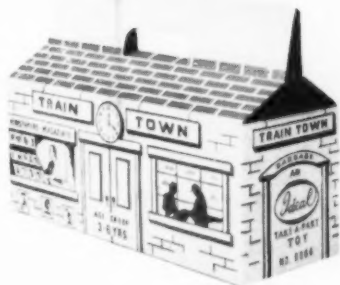


## ALL HAVE IT NATURALLY!

Simple identification and protective packaging  
come home-grown in the snail and the clam.

A natural in simple identification and protective  
packaging for Ideal's toy train  
grew in the design rooms at Grand City.

Growing daily are Ideal's sales with  
a package that incorporates utility,  
eye-appeal and economy too!



*40 years of packaging America's foremost products.*

### GRAND-CITY CONTAINER CORPORATION

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LONGACRE 4-1515 • UNION 5-4400



**You get perfect reproduction of your art work every time  
when you use a SUN TUBE. We'd like to show you.**

## **SUN TUBE CORPORATION, HILLSIDE, N.J.**

**St. Louis 1, Missouri:** Marvin Yates Co., Arcade Building

**Cincinnati 8, Ohio:** Ralph H. Auch, 3449 Custer Road

**New Orleans 19, Louisiana:** R. P. Anderson Co., 925 N. Solomon Pl.

**Houston 19, Texas:** R. P. Anderson Co., 5643 Overbrook Lane

**Dallas 2, Texas:** R. P. Anderson Co., 1122 Texas Bank Building

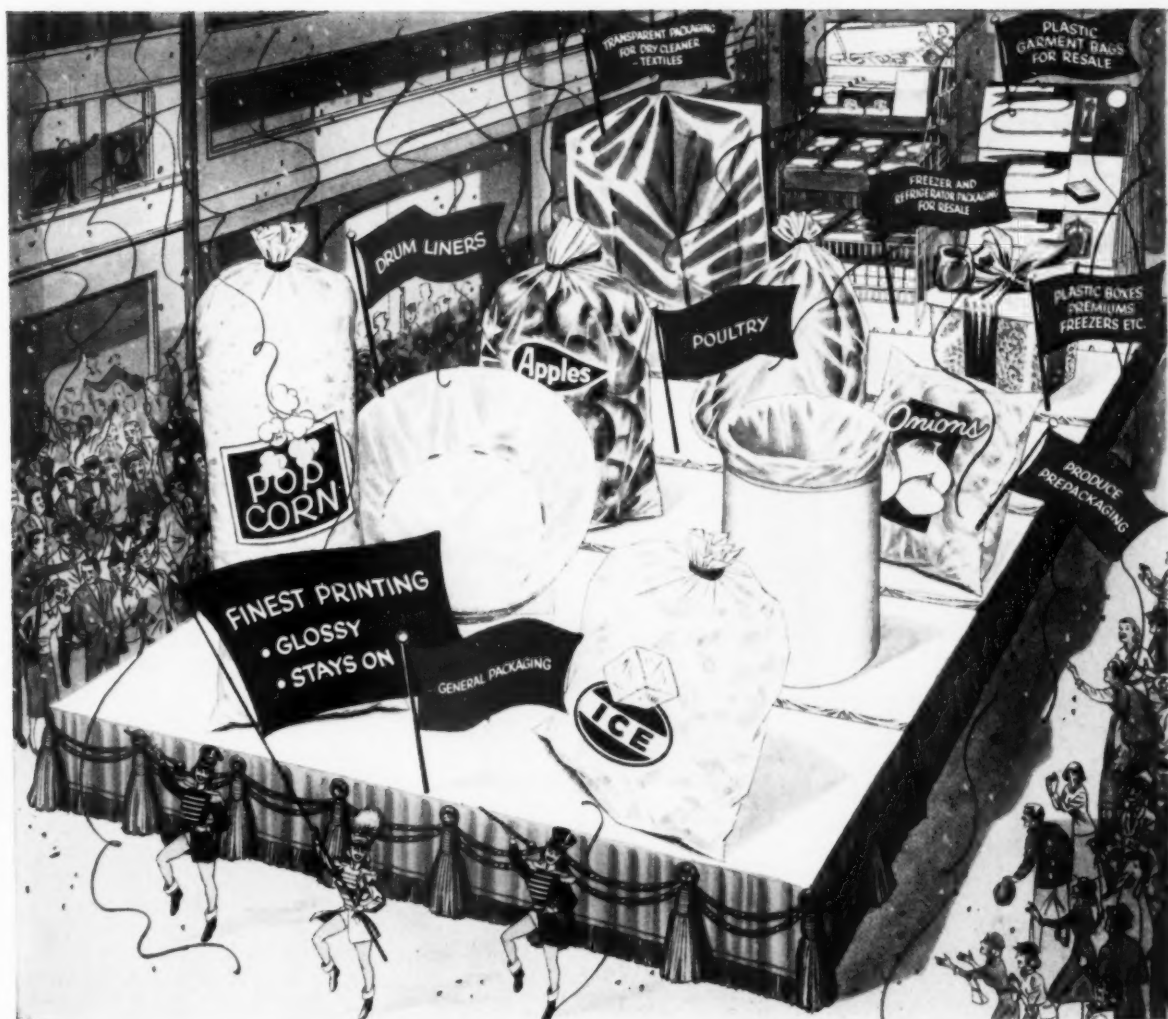
**St. Paul 1, Minnesota:** Alexander Seymour, 712 Pioneer Building

**West Coast:** Wm. J. Stoepker, 301 E. Colorado, Arcadia, California

**Canada:** Sun Tube Corp., 145 Spruce Street, Ottawa, Ontario

**Mexico:** Tubos de Estano, S. A. de C. V., 174 Oriente No. 267, Colonia Montezuma, Mexico, D. F.





## There's a good reason Why!

Before you package any product, you've got to put your confidence in the packaging. People everywhere, whether they're packaging produce, meat, cheese, chemicals, clothing or lubricants, put their confidence in Mehl's SEE-SAFE Plastic Packaging . . . and there's a good reason why.

Whether in consumer or industrial packaging, SEE-SAFE has always been a pioneer in ideas. Today, for example, SEE-

SAFE plastic printing is acclaimed finest in the country . . . it absolutely stays on. Its polyethylene film is the clearest available. In addition, new SEE-SAFE developments like the SEE-SAFE Polyethylene Multi-Wall Drum Liner have made possible unbelievable savings in packaging.

The tremendous success of the Mehl SEE-SAFE line and the packaging Mehl has created for many nationally known products can also be yours! May we be of service to you?

**See-Safe** PACKAGING  
by MEHL MANUFACTURING CO.

A Division of Sydney-Thomas Corp.  
2057 Reading Road, Cincinnati 12, Ohio

# high-speed, high-volume printing and converting are **simplified**



... with this **NEW**  
Rotogravure Press  
with Rewind Delivery  
the secret is  
**CENTRALIZED CONTROL!**

All press equipment can be controlled from each color or control station. All controls are on the operator's side of the press. All running controls are FULLY AUTOMATIC.



**AUTOMATIC COMPREHENSIVE CONSTANT-TENSION CONTROL** ... from roll stand to delivery, hydraulically-actuated mechanisms maintain constant, *balanced* tension on all points of the continuous web.  
**AUTOMATIC ELECTRONIC RUNNING-REGISTER CONTROL OR MANUAL PUSH-BUTTON CONTROL** ... maintains precision printing register at all production speeds.

**AUTOMATIC MAINTENANCE OF PRINTING PRESSURE** — Hydraulic impression cylinders maintain, and return to, exact pre-set printing pressure.

The only adjustment required to operate press over full printing range is the Vernier setting of the variable speed pull tension control which:

1. Stabilizes web travel throughout printing section.
2. Permits rewinding delivered rolls of **ANY DESIRED DENSITY!**

Models	14"	20"	26"	36"	44"
Max. Print. Width	14"	20"	27"	36"	44"
Max. Web Width	15"	21"	28"	37"	45"
Min. Cyl. Circum.	9"	13"	17"	17"	17"
Max. Cyl. Circum.	18"	26"	34"	34"	34"
Production speed (with rewound roll delivery) on:				Speeds up to	
Cellophane				500 feet per minute	
Glossine, sulphite, light paper, paper-backed foil				600 feet per minute	
Kraft and heavy paper and board				800 feet per minute	
*14" and 20" models maintain printing pressure by electric push button control.					

## Champlain &

Champlain manufactures a complete line of roll-fed rotogravure, flexographic, letter press, cutting and creasing and allied equipment for packaging and specialty printing.

This precision-built *complete* rotogravure unit prints *most* stocks—from light films to heavy, rough papers and board—with impression pressures from 0 ("kiss") contact to 400 lb. per lineal inch. Precision-built for sensitive, delicate work, yet able to withstand heavy impressions, this unit will give more-than-satisfactory service for years with practically no maintenance. It will maintain accurate register and fidelity of reproduction—even with heaviest production schedules.

### FULLY-AUTOMATIC RUNNING CONTROLS PLUS ALL THESE QUALITY FEATURES:

- Heavy duty unit drives maintain register with minimum control.
- Full retention of all tonal qualities in printing cylinder insured by full-range doctor blade adjustment, sensitive hydraulic impression adjustment, and uniform inking in the first quadrant of printing cylinder with secondary inking.
- Individual color unit dryers provide maximum area of web under dryers with minimum web leads.
- All printing units readily converted to back printing without turning bars.
- Equipment explosion-proof wired.

Write today for catalog of Champlain press equipment and full information on NEW Champlain Rotogravure Presses with Rewind Delivery. Champlain Company, Inc., 88 Llewellyn Avenue, Bloomfield, N. J. Chicago office: 520 N. Michigan Avenue, Chicago 11, Ill. 3208

SMART  
PACKAGING

with...

**JOHNSTON** *FOIL*

ALUMINUM... TIN... LEAD... COMPOSITION TIN AND LEAD

...SPARKLES  
AS IT PROTECTS  
AS IT SELLS...



America's foremost producers of fine cheeses depend upon

JOHNSTON FOIL for protective packaging—that seals in the  
flavor, assures tangy freshness, and lends 'eye and buy' appeal.

*What are **YOUR** needs?*

JOHNSTON  
HOUSEHOLD  
FOIL TOO

SINCE 1889



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# DRESSED UP

to win friends AND INFLUENCE PEOPLE



**PRODUCTS AS VARIED** as peat moss, rubber goods, crackers, gift hardware, and turkeys have demonstrated the sales-winning display value of our colored liner to give corrugated board both beauty and variety and to enhance gift appeal. Samples illustrated above are typical results of our complete **PLANNED PACKAGING** facilities which include design, testing, board manufacture, finished production, and package line engineering.

*Planned  
Packaging  
Moves  
Merchandise*

## THE OHIO BOXBOARD CO.

Home of "PLANNED PACKAGING"

**RITTMAN • OHIO**

Manufacturers of paperboard, folding boxes, corrugated and fibre shipping containers, and converted specialties  
SALES OFFICES: RITTMAN, O. • AKRON, O. • CUYAHOGA FALLS, O. • CLEVELAND, O. • COLUMBUS, O.  
YOUNGSTOWN, O. • CINCINNATI, O. • TOLEDO, O. • MANSFIELD, O. • CANTON, O. • CAMBRIDGE, O.  
PITTSBURGH, PA. • ERIE, PA. • NEW YORK, N. Y. • CHICAGO, ILL. • ST. LOUIS, MO. • DETROIT, MICH.



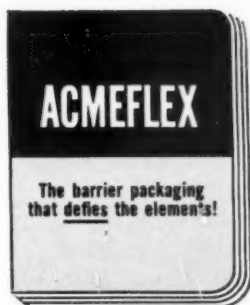


## TIME STANDS STILL INSIDE YOUR PACKAGE...

Does every tick of the clock rob your product of a fractional share of its original perfection?

Such loss need not occur. Acmeflex—the new wonder packaging material—virtually makes time stand still inside your package. Delivers your product to its final destination in the same condition it left your hands days, weeks, months before.

Acmeflex is a unique barrier... provides the ultimate in protection... possesses the perfect degree of flexibility... can be engineered to your specific requirements. For high-speed automatic packaging, Acmeflex is unsurpassed.



**Send for ACMEFLEX CATALOG** containing representative samples of Acmeflex with specifications for packaging almost any product.

**ACME PACKING CORPORATION**  
Meadow & Bogart Streets, Brooklyn 6, N. Y.

# When You've "Led The Horse To Water" How Do You "Make Him Drink?"



## Custom Made

**Appearance Factor in Self-Service Super-Market Selling Highlights the Answer!  
For Cigarette Manufacturers — and Many Others — It's an Inviting New Carton**

New selling methods are emphasizing an old selling fact . . . cartons that command attention and invite purchase are an *essential* for success in any self-service retail distribution. Advertising can lead customers to the point of purchase, but appearance then plays a primary part in making them buy . . . one product in preference to another. The bright white sheen, the appearance and *fact* of quality, always give the "impulse edge" to cigarettes and other highly competitive products cartoned in Ridgelo's clay-coated custom made stock. There's simply nothing else like it . . . for absolute uniformity, for perfect printability, for economical forming and filling. Take a tip from the sales leaders . . . specify Ridgelo for *your* next carton order. It will be custom made to your *exact* requirements!

**MADE AT RIDGEFIELD, N. J. BY LOWE PAPER COMPANY**

*Representatives* H. B. Royce, Detroit  
Philip Rudolph & Son, Inc., Philadelphia  
A. E. Kellogg, St. Louis  
Norman A. Buist, Los Angeles

### POLYETHYLENE — Specialty of the Month

And now a strong, light-weight barrier board with excellent moisture and grease resistance, for food, detergents and chemical packaging. Investigate Reggie Ridgelo's POLYEON which combines the outstanding properties of Polyethylene with selected materials, to help produce superior packaging for your customers.



**Write today** for your samples of POLYEON barrier boards, food boards, kraft, foil, non-woven cloth, box-board, tag and other sales-building combinations for protective packaging.

# Chronic Labeling Ailments *CURED INSTANTLY*

with **Steigerwald**  
Heat Seal Labels

**NO GLUE - NO WATER - NO CLEAN-UP**  
**NO BLISTERED LABELS - NO WRINKLED LABELS**  
**NO MESS - NO LOOSE EDGES - NO SMEARS**



Label Dri Challenger  
applying  
**STEIGERWALD**  
Heat Seal Labels

On flat, round, or tapered containers including

**BOTTLES - JARS - BOXES - AMPULES**  
**JUGS - CANS - BOXES - HARDWARE**  
**DRY GOODS - SPOOLS - DISHES, ETC.**

**STEIGERWALD HEAT SEAL LABELS** without glue save labor and result in better labeling. Regardless of the size, shape or design of the product and the label—there's a **STEIGERWALD HEAT SEAL LABEL** without glue for every labeling operation.

**it's well worth a phone call to investigate  
labeling without glue...**



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**a. m. steigerwald company**

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MEmphis 8-2574

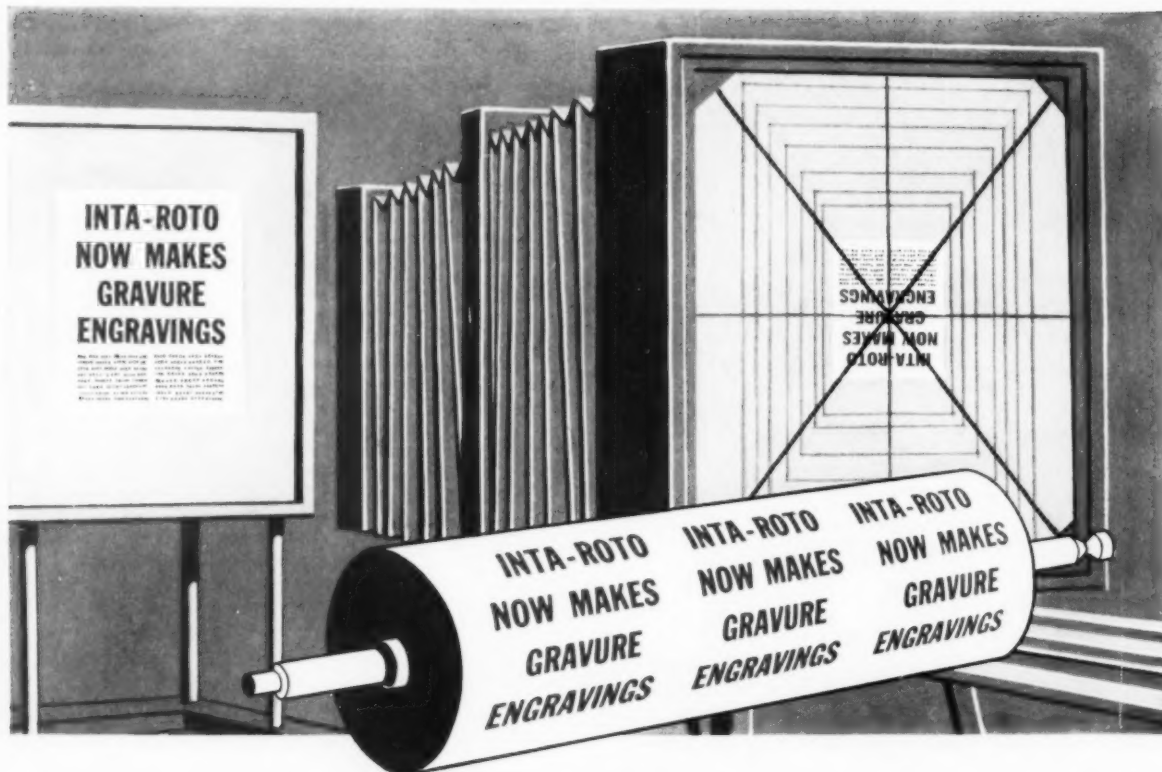
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# INTA-ROTO NOW MAKES GRAVURE ENGRAVINGS

Albert H. Merz, President of the Inta-Roto Machine Co. in Richmond, Va., announces the opening of a new rotogravure engraving service, the Inta-Roto Engraving Corporation. The company occupies a new, completely air conditioned modern building conveniently adjacent to the Inta-Roto Machine Co., where gravure base cylinders and converting machines are manufactured. The engraving plant has facilities for copper plating, engraving, chrome plating, and proofing cylinders. The most modern equipment in cameras and step and repeat machines have been installed.

Mr. Merz will also serve as president of the new engraving company. In addition, other skilled craftsmen who are well known in the profession assure precision engravings. The Inta-Roto Engraving Corporation will be completely staffed and equipped to produce engravings that will meet the most rigid standards of production men and art directors.

*Inquiries by mail or telephone are cordially invited.*

*You are cordially  
invited to write to the*

**Inta-Roto  
MACHINE Co.**

*for special dates on which  
to see demonstrations  
of their various  
laminating machines.*



**INTA-ROTO ENGRAVING CORP.**

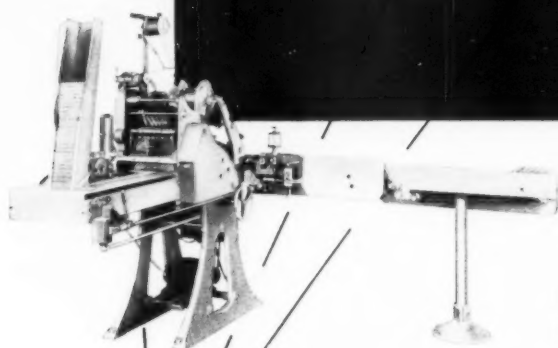
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# Increase Sales!

WITH  
EYE-APPEALING PACKAGES  
FOR IMPULSE BUYING



TEN OR TWENTY UNITS WRAPPED  
IN ONE PACKAGE,

UTILIZING PRINTED CELLOPHANE WITH OPEN-  
ING TAPE. ELIMINATING COSTLY CARTONS.

*Fully Automatic*

- INTAKE
- HIGH SPEED WRAPPING
- TWO-WAY REGISTRATION
- EASY OPENING TAPE

For the latest in automatic packaging, consult...



## SCANDIA

*Manufacturers of Better Packaging Machinery*

• 500 BELLEVILLE TURNPIKE • NORTH ARLINGTON, N. J. •

330 SOUTH WELLS ST., CHICAGO 6, ILL.

**BUNDLING • BANDING • MULTIPLE WRAPPING • STAMPING • HIGH SPEED WRAPPING**  
MANUFACTURED UNDER BRONANDER PATENTS.



## Introducing the NEW Thermatron

# Thermatron

HIGH FREQUENCY SEALING AND HEATING EQUIPMENT

## Acetate and Vinyl Packaging Machine

### ELECTRONIC CONTOUR PACKAGING OF PLASTICS IN A SINGLE OPERATION!

Small items such as golf balls, razor blades, cosmetics, drug items, etc. can now be contour packaged in a single economical operation on the new THERMATRON acetate and vinyl packaging machine which consists of a THERMATRON high frequency sealing generator, sealing press and a turntable.

Acetate, rigid vinyl or a combination of rigid and soft vinyl may be used to create a package that is individual, attractive and practical. Eye appeal plus low cost make contour packaging the THERMATRON way a *must*.

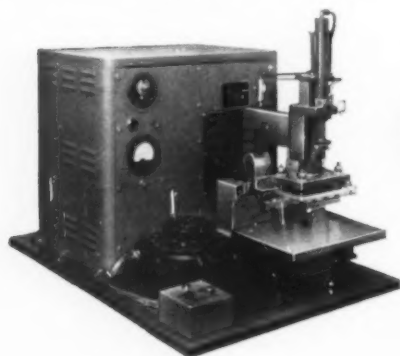


The distinctive new "Plasti-Guard" packaging now being used by United States Rubber Company for its True Blue and Three Star U.S. Royal golf balls. Each ball is covered with an electronically sealed plastic covering produced on THERMATRON that gives complete protection to the ball until ready for use.

# T H E R M A T R O N

As many units as the THERMATRON generator can handle electronically are sealed in one operation, and in the case of golf balls that's three at a time. Sealing rate varies between 12 and 20 operations a minute, and ejection of the package may be automatic or manual. The entire machine is shielded and certified to conform to F.C.C. requirements.

For further information and specifications without obligation, write for Bulletin M-6.



**Thermatron Division**

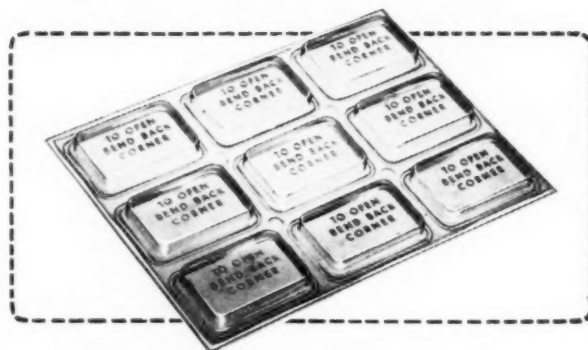
**RADIO RECEPTOR COMPANY, INC.**

*Since 1922 in Radio and Electronics*

**SALES OFFICES:**

New York 11: 251 West 19th St. • Chicago: 2753 West North Ave.

New York Telephone: WATkins 4-3633 • Factories in Brooklyn, N.Y.



Razor blades and drugs, etc. can be attractively displayed in these THERMATRON sealed plastic containers. Single items may be removed without spoiling the individual packages.

# Strategic Locations



## CLEVELAND CONTAINER FACILITIES ENSURE PROMPT SERVICE AND DELIVERIES AT LOW CUSTOMER COST

Our complete line of containers offers the customer a wide choice in packaging. Cleveland Containers can be used for practically all dry products. They are of sturdy construction and can be furnished with special liners, colored spiral wraps or labels.

Our customers know that Cleveland Containers are efficient, economical and attractive. They enhance a good product through better packaging. This can be accomplished at low cost . . . with a container designed to fit your exact needs.

We offer you our long experience in packaging a wide variety of products.

**WHY PAY MORE? . . . for the best,  
Call Cleveland!**

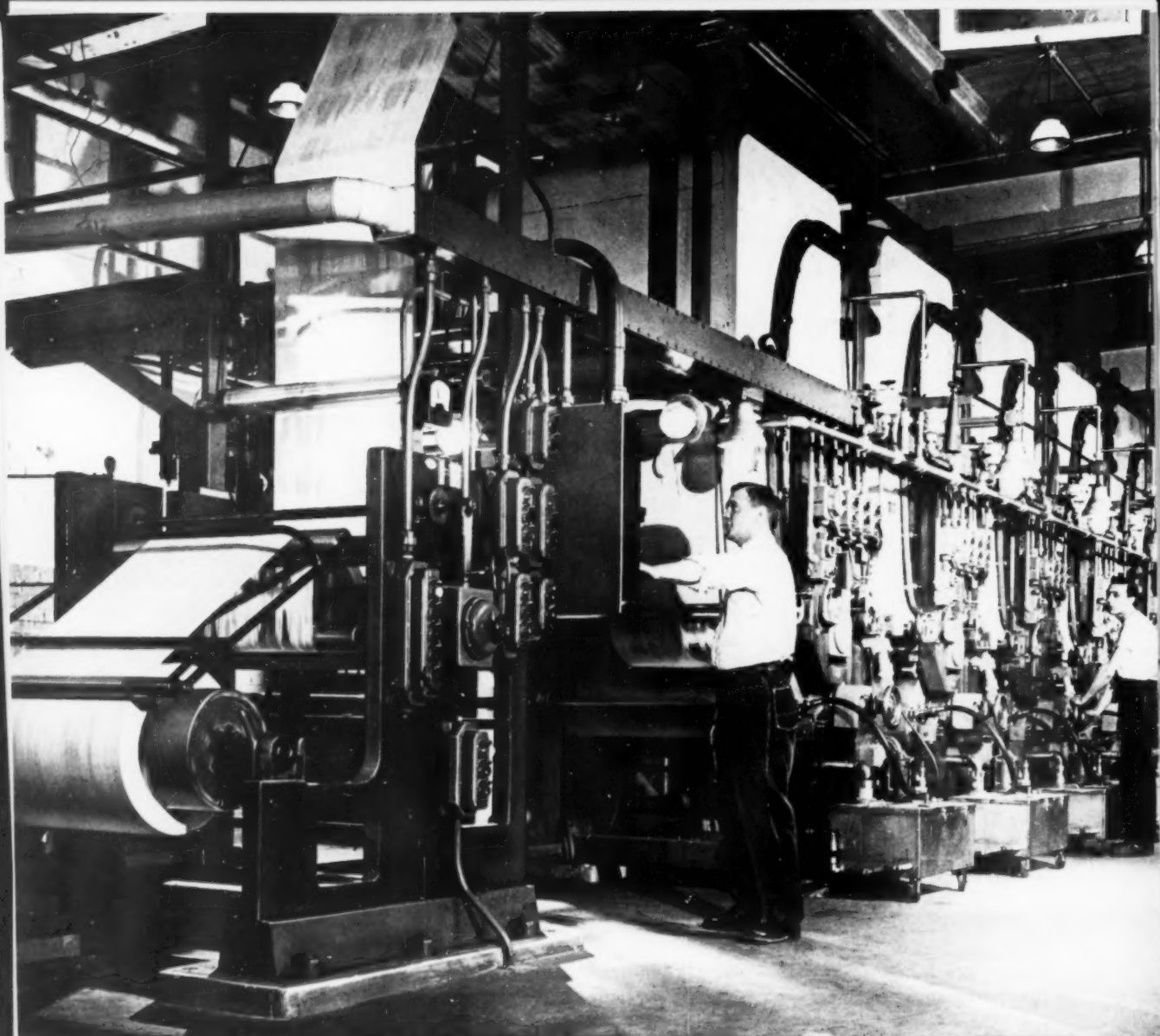
Ask for folder on:

Plain All-Fibre Cans  
Metal End Slip-Cover Cans  
Metal End Friction Plug Cans  
Metal End Turn Sifter Top Cans  
Metal End Screw Top Cans  
Metal End Telescope Cases  
Unit Pack Cans  
Convolute Labeled Cans  
Tubing, All Sizes & Lengths.

*The* **CLEVELAND CONTAINER Co.**  
**6201 BARBERTON AVE. CLEVELAND 2, OHIO**  
 • All-Fibre Cans • Combination Metal and Paper Cans  
 • Spirally Wound Tubes and Cores for all Purposes

PLANTS AND SALES OFFICES: Cleveland, Chicago, Detroit, Memphis, Plymouth, Wisc., Ogdensburg, N.Y., Jamesburg, N.J. • ABRASIVE DIVISION at Cleveland.  
 SALES OFFICES: Grand Central Terminal Bldg., New York City; Washington Gas Light Bldg., Washington, D.C.; West Hartford, Conn.; Rochester, N.Y.  
 Cleveland Container Canada, Ltd. PLANTS AND SALES OFFICES: Toronto and Prescott, Ont. • SALES OFFICE: Montreal.





**Complete Accessibility** of the Kidder gravure press is one of many advancements that make it easier for your operators to deliver the top-quality results *you* want.

## Kidder gravure has earned its leadership

### *Large Converter Writes:*

"I am especially pleased with the wonderful workmanship . . . You are to be highly complimented on an exceptionally fine job of engineering . . . This press has everything our pressmen have been asking for."

**Speed** — 1,000 f.p.m. — in perfect register — fully dried — accurately rewound.

**Quality** — A Kidder Gravure

Press prints the *entire* etch — gives an exact reproduction of the original.

**Economy** — Revolutionary doctor blade control doubles cylinder life — controlled inking and drying reduces solvent loss.

Ask us for the whole story on how the Kidder Gravure will print your product at the lowest overall cost . . . Kidder Press Company, Inc., Dover, N. H.



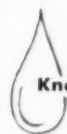
**Letterpress, Flexographic  
and Gravure Presses  
Slitters and Rewinders**



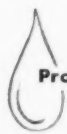
# Successful packaging boils down to three essentials



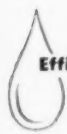
Here's a *variety* package that offers shoppers all the fixin's for a New England boiled dinner . . . plus the bonus of a meat coupon. Like any *effective* package, it's based on three important factors:



**Knowledge of buying habits**—today's busy shoppers have shown that they buy convenience . . . and that they like to see what they buy.



**Proper packaging film**—one that gives the product eye-catching display . . . and best meets its protective needs.



**Efficient package construction**—planned to make most economical use of materials . . . permit easy loading and sealing.

No matter what kind of package your product requires, let Du Pont help you with all these essentials. Get in touch with your Du Pont representative. He'll help you select from the 115 varieties of three basic films—Cellophane, Polyethylene and Acetate—offered by Du Pont. Or, for full information, including the latest Du Pont studies of buying habits in your field, write: E. I. du Pont de Nemours & Co. (Inc.), Film Department, Wilmington 98, Delaware.

Only Du Pont gives you all these packaging aids:

1. **WIDE VARIETY OF PACKAGING FILMS** scientifically tailored to meet the needs of varied products and packages.
2. **TECHNICAL** assistance to help you plan the most practical and efficient construction of your package.
3. **MERCHANDISING** help through continuing nationwide surveys of buying habits, to keep your package up to date.
4. **NATIONAL ADVERTISING** to continually strengthen consumer preference for your packaged products.

## DU PONT PACKAGING FILMS

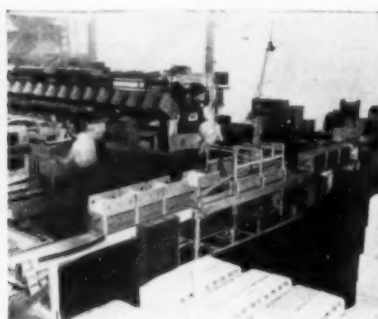
CELLOPHANE  
POLYETHYLENE • ACETATE



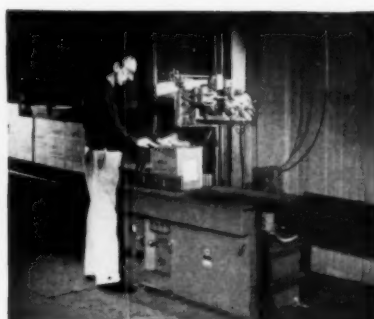
Better Things for Better Living  
... through Chemistry



THOR CORP., GLADIRONS



GARDEN GROVE, CITRUS FRUITS



UARCO, INC., BUSINESS FORMS



ENTIAT, APPLES



EXCELSIOR, BICYCLES



CANDYLAND, CANDY



AVON PRODUCTS, COSMETICS



HARRISON, STEEL CABINETS



PINNACLE, FRUIT PACKERS



## NINE WAYS TO CUT PACKAGING COSTS ...with international staplers!

Nine different companies . . . nine different problems. Yet, all of these companies found a common solution in the versatility, economy and dependability of International Stapling Machines. More than twenty different models, from simple and efficient hand operated portable models to the last word in completely automatic equipment, are available to meet *your packaging needs*. They have saved other companies from \$11,000 to more than \$28,000 per year . . . as high as eight times their cost.

**Check these advantages:** International staplers are fast ★ Staples do not hide ad copy ★ Safe, strong closures ★ Pilfer-proof closures ★ Save working space ★ Save manpower ★ Save material ★ and they meet shipping regulations.

Investigate these money and time saving "packaging experts" today! Write for bulletin C-201, 12 page complete line catalog, or tell us your special problems.

*the Royal Family of Packaging*



### International Staplers

International Staple & Machine Company  
806 East Herrin Street, Herrin, Illinois

**art for sales sake...**



**fisher's foils**

FISHER'S FOILS LIMITED · EXHIBITION GROUNDS · WEMBLEY · MIDDLESEX · ENGLAND  
TELEPHONE: WEMBLEY 6011

CABLES: LIOFNIT WEMBLEY (ABC CODE 6TH EDITION)



*A Quality Product of FISHER'S FOILS of LONDON, ENGLAND.*

Throughout all stages of manufacture, every roll of foil made by Fisher's Foils of England is *automatically controlled* for gauge consistency by the latest beam gauge. Send today for wide range of samples or ask our representative to call.

**fisher's**  
**foils**



**Satisfaction rests on the carton**



Your box is an advertising medium  
—en route and at the point of sale. Good design and good  
printing make it easier for good copy to sell merchandise. So do your  
container's protective qualities, which bring your product to the  
consumer looking its best. Shipment in a Union box is added  
assurance of greater point of sale impact, greater customer satisfaction.

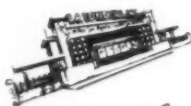


**UNION BAG & PAPER CORPORATION**

CORRUGATED CONTAINER DIVISION • Box Plants: Savannah, Ga., Trenton, N. J., Chicago, Ill.  
Eastern Division Sales Offices: 1400 E. State St., Trenton 9, N. J. • Southern Division Sales Offices: P.O. Box 570, Savannah, Ga.  
Western Division Sales Offices: 4545 West Palmer, Chicago 39, Ill. • Executive Offices: Woolworth Bldg., New York 7, N. Y.

# Take a BEE-LINE to Manila...

MANILA



The World Bee-Line Labeler  
Economic Machinery Co.  
Div. Geo. J. Meyer Manufacturing Co.  
Worcester 3, Massachusetts  
U. S. A.

Dear Sirs:

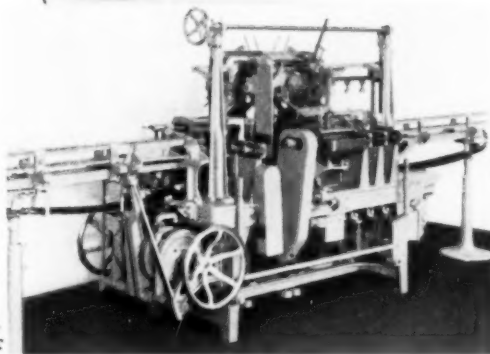
Since its installation some months ago, your World Bee-Line Labeler has been functioning very smoothly in our factory. It has been so efficient, so near a perfect machine, that it has been the center of admiration of all who have seen it.

Being the pioneer in the installation of fully automatic bottling equipment for alcoholic beverages, and enjoying the reputation as the foremost liquor manufacturer here in the Philippines, our factory has been the object of countless excursions. Rotarians, Jaycees, Lions, students and professionals have taken turns in viewing our bottling processes. There's no doubt that the itinerants express a particular admiration for your World Bee-Line Labeler. We are deservedly proud of owning your equipment.

Very truly yours,  
LA TONDENA, INC.

*Antonzo G. Palanca*  
ANTONZO G. PALANCA  
Asst. Gen. Manager

and  
here's what  
they say  
about it



The World Automatic Bee-Line Labeler is for quality, precision application of body labels, front and back labels, neck or shoulder labels and medallions to round, square, flat, oval or panel containers.

It is available in five models to cover a wide range of container sizes and production requirements. For complete specifications and estimates get in touch with



**ECONOMIC MACHINERY COMPANY**

48 FREMONT STREET

WORCESTER 3, MASSACHUSETTS

DIVISION OF GEO. J. MEYER MANUFACTURING COMPANY

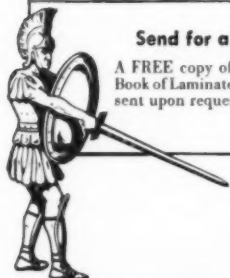
CUDAHY, WISCONSIN, U. S. A.



# SEAL-OF-APPROVAL

# ON GUMMED PRODUCTS STOCK

**TROJAN**  
 A Complete Line of  
 LAMINATED FOILS  
 LAMINATED PAPERS  
 LAMINATED FABRICS  
 FOIL CARD STOCK  
 WRAPPING FOILS  
 HEAT SEAL FOILS  
 HEAT SEAL PAPERS  
 LABEL PAPERS  
 STAMP PAPERS



**Send for a Sample Book**

A FREE copy of the Trojan Sample Book of Laminated Foils will be gladly sent upon request. WRITE TODAY.



**Why General Trade Mark Co., Inc.  
 Selected Trojan Foil**

This seal of gold and maroon certifies the high quality of Grant's white wool socks to which it is applied.

Trojan Gold Foil was selected for this seal because of its excellent printing and die-cutting qualities. The gumming is instantly water-activated and dries quickly, to permit rapid packaging. The label adheres securely to the fabric, but peels off easily without leaving objectionable residue.

If you have a decorative package or label under consideration, The Gummed Products Company is ready, without obligation, to help work out the details of label stocks, wraps, wrappers or seals in conjunction with your package supplier or printer. Write us, giving his name.

**The  
 GUMMED PRODUCTS  
 Company**

Main Offices and Mills: **TROY, OHIO**—Sales Offices: Atlanta, Chicago, Cincinnati, Cleveland, Los Angeles, New York, Philadelphia, St. Louis, San Francisco—Distributors from coast to coast.

## What is creative packaging?

Originally a package was simply a collection of things packed together for transportation by man, beast or ship. It was a bundle, a parcel or a container, this and nothing more.

Centuries went by before it was discovered that a package could be made to help sell the merchant's wares as well as to transport or store them. This was the beginning of *creative packaging*.

The fundamental idea of creative packaging is that merchandise cannot be allowed to sit passively on store shelves and counters. It must appear in packages that call attention to themselves, de-

scribe their contents, and promise value, quality and convenience.

Beyond protecting products and making them attractive and handy to carry, a creatively-designed package will also make the product easier to use after it is sold.

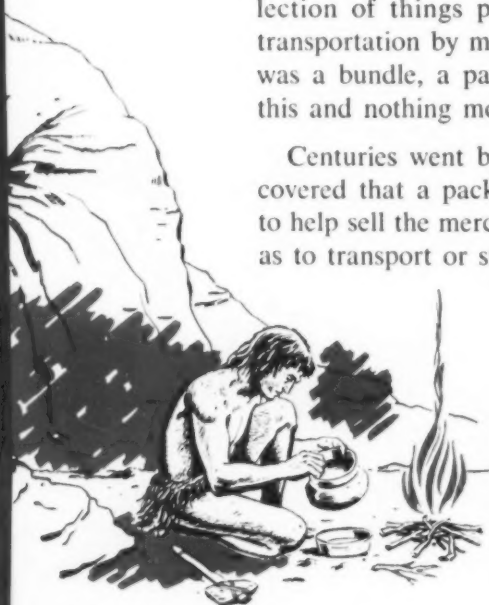
### *An art and a science*

Creative packaging is both an art and

a science. The art comes in designing a package that will create a buying urge. The science comes in relating the structure of the package to the product itself, making a sound choice of available packaging materials, and adapting their characteristics to the requirements of high-speed filling, closing and handling operations.

One of the most exciting things about packaging is that it is constantly changing. The good package of today may be inadequate tomorrow because of altered consumer tastes or living habits. No package design can ever be considered final. Creative packaging is a powerful means of protecting time-proved products from losing their favor in the market-place—just as it is important in getting new products off to a successful start.

Out of their long experience, Continental packaging people have developed some working rules for the creation of effective packaging. In this series of articles, we plan to share this information with you. Since we work with more kinds of packaging materials than any other U. S. packaging company, we hope to help you broaden your outlook, particularly if your thinking has been confined to one or two packaging fields.



Fragments of containers used by prehistoric man have been found in many excavations. In addition to jars, primitive man used woven fibres, large leaves and animal hides as "packages" to carry his few possessions.





● These creations of Continental packaging specialists exemplify the wide range of materials now available to modern designers. Included are seals or containers of metal, fibre, cellophane, foil, laminates and coated materials. Some give new convenience or protection to familiar products. All enhance sales potentialities and build good will for the processor or packer.



**CONTINENTAL © CAN COMPANY**

Continental Can Building • 100 East 42nd Street, New York 17, N.Y.

**TAILOR-MADE  
PACKAGE SERVICE**



This  
printing  
is

**HERE**

to  
stay!



IT WON'T PEEL, FLAKE OR RUB OFF FILM  
MADE OF "BAKELITE" **Polyethylene**

Look how your packaging can benefit from film made of BAKELITE Polyethylene. Names and trade-marks last indefinitely. Eye-catching designs and colors give your package extra sales appeal. Product identification is immediate and displays are brighter and more effective.

At the same time, film made of BAKELITE Polyethylene protects merchandise in a strong, transparent, moisture-proof covering that keeps it clean and saleable. It offers excellent product visibility and resists tearing, cracking and abrasion. Bags made from this pliable film can be closed by sewing, stapling, heat-sealing or tying.

This is but one example of the many packaging uses for versatile BAKELITE Polyethylene. It is also molded into squeeze bottles, flexible tubes and laminated to foil and cellophane to give heat-sealability and added strength. Get to know more about this useful material. Write to Dept. TS-55.

Produce Bags by **Milprint Packaging Materials**,  
4200 N. Holton Street, Milwaukee 1, Wis.

**BAKELITE**  
TRADE-MARK  
**Polyethylene**

**BAKELITE COMPANY**

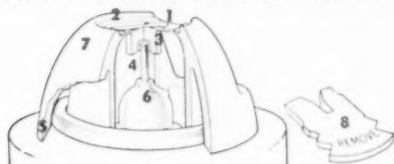
A Division of Union Carbide and Carbon Corporation **UCC**  
30 East 42nd Street, New York 17, New York

# SCHRADER TRIPLE-TESTED VALVES MEAN LOWER REJECTION RATES

Aerosol loaders who have used vast numbers of Schrader Valves have found lower rejection rates, because Schrader Aerosol Valves receive the most thorough inspection. They're triple-tested . . . every critical component part 100% machine tested for correct tolerances. Low rejection rates mean lower costs. And the elimination of 'dud' returns from retailers protects the reputation of your product.

**No Aerosol Product is Better than its  
Valve—No Valve is Better than Schrader's**

Schrader produces Aerosol Valves with fully automatic machinery . . . maintaining complete control of production, because nothing but raw materials are bought outside. Schrader even makes its own metal closures.



1. Arrow points clearly to direction of spray
2. Flexible operating portion of Presdome is countersunk
3. Solid button recessed for valve pin
4. Valve pin designed for positive spray shutoff
5. Solid plastic dome grips closure shoulder permanently —no slipping or turning
6. Famous Schrader seating principle is used in the valve
7. Caps available in various colors to match your label . . . by request
8. Special tamper-proof locking tab is available

## Schrader

REG. U. S. PAT. OFF.

Use our research facilities to develop a superior Aerosol package. Send for samples and further information.

**AEROSOL VALVES** made by the

manufacturer of the Standard Tire Valve since the first Automobile

MAIL THIS COUPON TODAY

A. SCHRADER'S SON

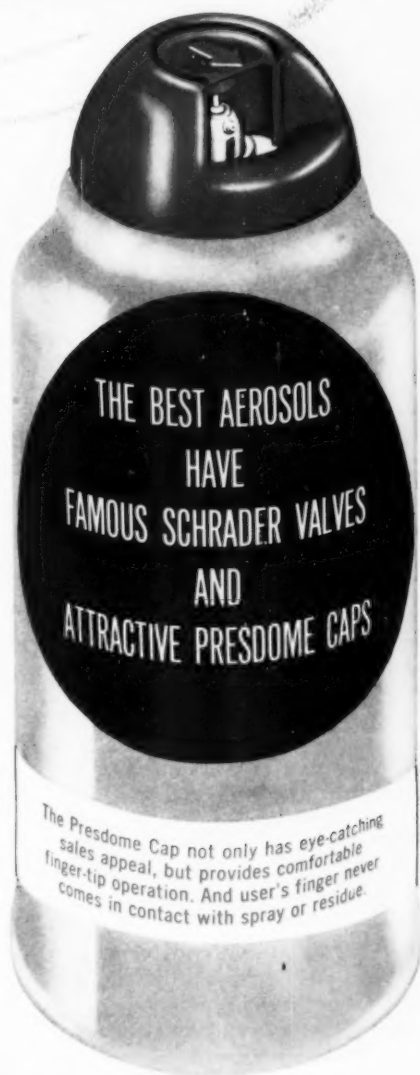
Division of Scovill Manufacturing Company, Incorporated  
470 Vanderbilt Avenue, Brooklyn 38, N. Y. Dept. MP

Please send me ☐ Samples ☐ Brochure ☐ Price List

Name \_\_\_\_\_ Title \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_



A Special  
"Packaging"  
Problem?



# NOBODY but STOCKER

Manufacturing Company

can TAILOR-MAKE reinforced sealing tapes  
and wrapping papers to your specifications!

Due to the "Controlled pattern" of reinforcement Stocker can give you the reinforced waterproof sheet or tape that would be best suited for your requirements. Contact us with your packaging problems. Do you need more strength in

one direction than in another? We are just the tailor for such a special sheet. We can give you whatever reinforcement you may require and the pattern will be absolutely uniform. Special widths? This tailor has no problems with odd sizes.

## STANDARD REINFORCED PRODUCTS

### TAPES

#### The Reinforced Sealing Tapes

- # 152 Glaspun Sealing Tape  
Asphalt Laminated  
Bi-directionally Reinforced
- # 102 Glaspun Sealing tape  
Asphalt Laminated  
Cross-directionally Reinforced
- # 63 Glasco Sealing Tape  
"Vulcanized"  
Bi-directionally Reinforced
- # 60 Glasco Sealing Tape  
"Vulcanized"  
Lengthwise Reinforced

### WATERPROOF PAPERS



- Glaspun Heavyweight #488
- Glaspun Middleweight #465
- Glaspun Creped-Middleweight #466
- Glaspun Scuf-Champ #467
- Glaspun Welterweight #443

### The "Utility" Line

maximum strength  
at minimum cost

- Glaspun #411
- Glaspun #422

# Stocker

"The leader in gummed tape"

MANUFACTURING COMPANY\*

Main Office & Plant: Netcong, New Jersey

Sales Offices: New York ... Boston ... Cleveland ... Chicago ...  
Philadelphia ... Atlanta ... Nashville ... Havana, Cuba ... Los Angeles ... Houston

\*Affiliated with Camp Manufacturing Company, Franklin, Virginia, an integrated producer of specification kraft (bleached and unbleached) and corrugating medium, assuring uninterrupted service on your gummed tape and waterproof paper requirements.

MAKE IT RIGHT AND SEAL IT TIGHT WITH GUMMED TAPE



**These Famous  
Packers**

**SELL MORE...**

**often at  
higher prices  
in**

**PLASTIC  
CONTAINERS**



**FOODS HAVE  
VISIBLE FLAVOR  
IN  
PLASTIC CONTAINERS**





## **SANITARY—COLORFUL—EYE-CATCHING!**

Hundreds of sizes, shapes, colors available now . . . more being developed every day

Imagine a container that sells more even at higher prices! That's what dozens of leading packers are discovering plastic containers will do for them with dairy products, candy, pickles and olives, molasses and honey, meat, fish, crabmeat, cheese . . . anything that sells better when it looks better. And, even the airlines are learning that individual plastic jelly containers save them money because they can be filled faster and cheaper. Sizes range from 1 oz. to over 50 ozs. and larger in round, square, wedge and rectangular shapes . . . in both ethylene and styrene. Costs? Comparable to traditional packaging. Write on your letterhead for samples and full information.

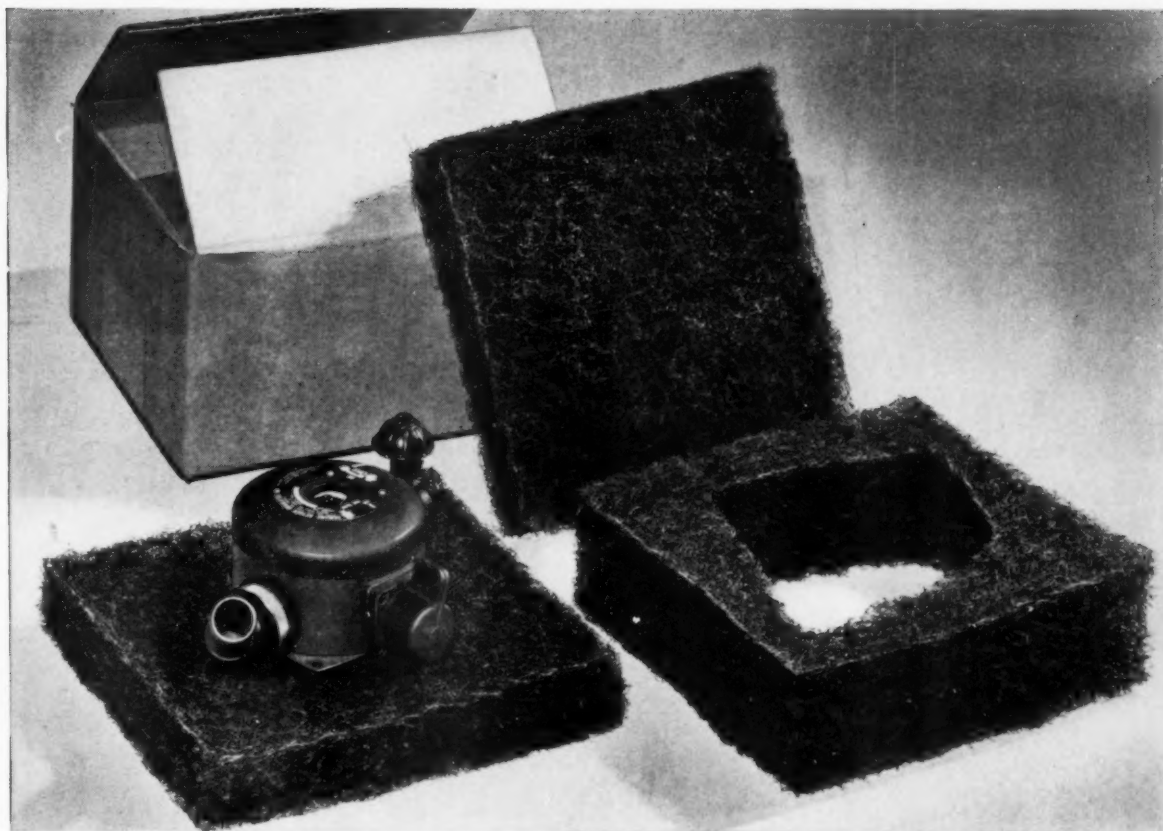
Let us imprint your sales message on lids or containers.



**PIONEERS AND LEADERS IN THE  
PLASTIC CONTAINER FIELD**

West Warren, Mass.

# Now! Protect your product with pillowed packaging!



## It's Hairflex! The safe, economical way to package your product!

Hairflex will be a magic word in your shipping room because it's so easy to use—saves time, work and money. It's pillowed packaging that fits your product like a glove, surrounding it with the safety that means so much to your customers, and your profits!

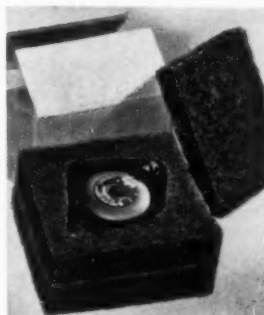
Actually, your product will be floating inside a cushion made up of lively curled hairs locked in rubber. This cushion is strong, resilient, and can endure the repeated shocks of rough handling. Hairflex, which conforms to government and military packaging specifications, comes in sheet forms of several densities and thicknesses—we die-cut it to fit any product. If your product has an unusual size or shape, or if you have any packaging problems, don't hesitate to write us—our engineers are ready to help you.

You can see right away how Armour's Hairflex is going to help your business by saving time and labor in your shipping room. No more bills for damaged merchandise either. Above all, you'll know that every single one of your shipments reaches your customers in perfect condition!

**ARMOUR**

*Curled Hair*

Armour and Company • North Benton Road • Alliance, Ohio



### IT'S EASY TO USE!

Notice how this demand oxygen regulator is packaged, using three pads of strong Hairflex. The center pad was die-cut in our factory to fit snugly around the product. That's how *your* product can be kept safe—by actually *floating* it in a protective cushion of Hairflex. All you do is assemble—and ship! For prices and specifications, a free sample of Hairflex, and our helpful packaging booklet, mail the coupon today!

Armour and Company • North Benton Road • Alliance, Ohio

Please send me: ☐ Booklet—"Pillowed Packaging"

☐ A Free Sample of Hairflex ☐ Prices and Specifications

Name ..... Title .....

Firm .....

Address .....

City ..... Zone ..... State .....





## Babying Your Products is the Special Talent of Gaylord Boxes

Gaylord Boxes cradle your product in *safety* from packing line to the end of the trip.

This positive protection is a natural result of Gaylord's specialized approach to container engineering. Successful experience and tireless ingenuity combine to produce

quality boxes that are exactly suited to your particular packing needs.

Many of America's leading manufacturers have learned to depend on Gaylord Boxes. How about you? For information and co-operation, phone your nearby Gaylord office. It's listed in your phone book.

GAYLORD CONTAINER CORPORATION

SALES OFFICES



General Offices: ST. LOUIS, MISSOURI

COAST-TO-COAST

CORRUGATED AND SOLID FIBRE BOXES • FOLDING CARTONS • KRAFT BAGS AND SACKS • KRAFT PAPER AND SPECIALTIES





"what a *difference*  
**AVERY**  
*Kum-Kleen*  
**LABELS** *make...*  
they're pressure-sensitive!

*...so easy to use  
-and fast too!"*

One simple motion—a fingertip pressure—and an Avery Kum-Kleen Label is on to stay! That's why pressure-sensitive labeling is different—there's no waste motion...no wetting loose labels...no gummy, sticky fingers, and no spoiled packages.

Self-adhesive Avery Labels are on in an instant—without moistening...and they won't curl, peel or pop off. They're made for every labeling job in your plant, office or store...for your product or production line.

Special Avery Label Dispensers—both manual and electric—simplify and speed all your labeling and marking jobs. They're low in cost—efficient in operation, even with unskilled help. They'll fit into any size or type of production line—for any application speed. Write for more detailed information on *Avery Pressure-Sensitive Labeling—today!*

**AVERY ADHESIVE LABEL CORP., Custom Div. 127**  
117 Liberty St., N. Y. 6 • 1616 S. California Ave., Monrovia, Calif.  
608 S. Dearborn St., Chicago 5 • Offices in Other Principal Cities

**SPECIFICALLY  
SPEAKING...**

IN THE PLASTICS FIELD—Avery Labels are used to *sell* products in self-service stores. B. W. Molded Plastics Co. puts their sales message right on the product—with an Avery Kum-Kleen Label. In this way, each product is its own silent salesman... no expensive displays are needed...there's no chance of the customer not knowing who makes it, how to use it, or what it's made of. Avery Kum-Kleen Labels stay neat and attractive—right to the consumer—yet they're easily removed without soaking or scraping, and without damage to the surface!



**AVERY**  
*Kum-Kleen*  
**LABELS**

Avery labeling specialists, experienced with the requirements and problems of many industries, are at your service to help you develop improved, low-cost labeling methods. No obligation... write today!



There's an Avery Dispenser—either manual or electric—especially suited for your particular labeling job. Both models feed individually die-cut labels from rolls, *one-at-a-time*, ready to be applied to any clean, smooth surface—with *production-line speed!*



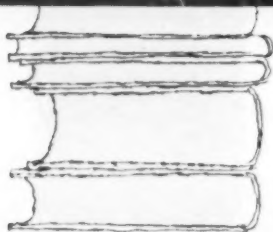
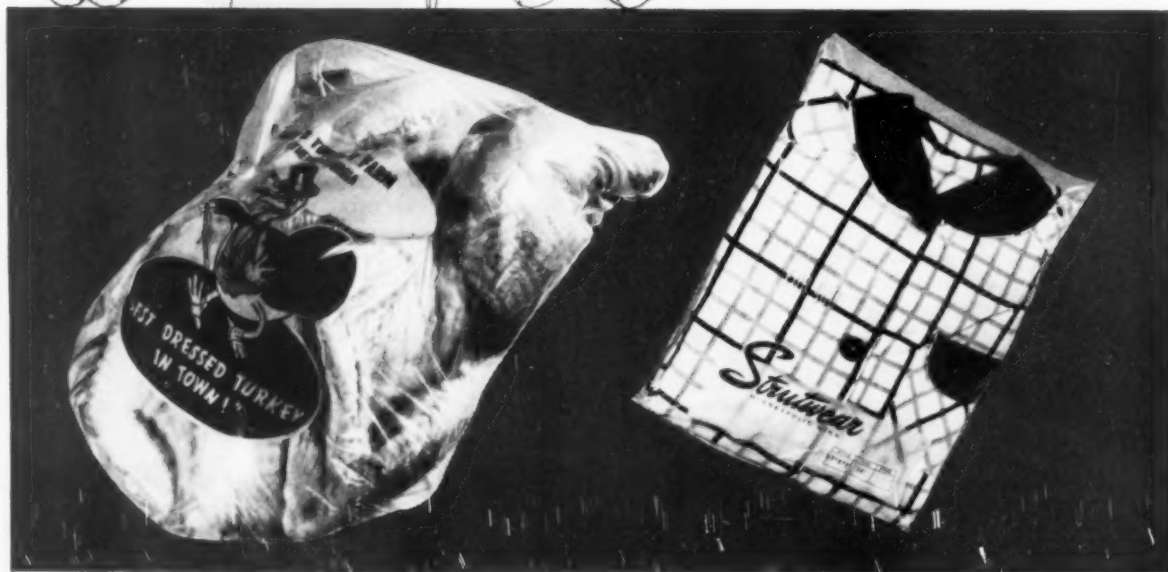
\*AMARANTHINE?

\*PERVIRID?

\*INDESINENT?

\*EVITERNAL?

# VIS



**VisQueen**<sup>®</sup> film... a product of

**THE VISKING CORPORATION**

World's largest producers of polyethylene sheeting and tubing  
Plastics Division, Terre Haute, Indiana

In Canada: Visking Limited, Lindsay, Ontario

MODERN PACKAGING

no matter how you describe it

# VISQUEEN

is the *everlasting* film

You don't really need a lot of dollar-and-a-half words to describe **VISQUEEN** film. In a simple six-for-a-penny phrase, **VISQUEEN** is so *durable*, acids that eat away metal don't bother it.

That's just one of the many qualities that make **VISQUEEN** the superior packaging film.

**VISQUEEN** is *tough*—won't split, crack, run, or shatter. It's hard to puncture, but even if snagged, damage won't spread.

**VISQUEEN** is *thrifty*—the gauge is so well controlled that you get exceptional uniformity. The end result for you is *more bags per pound*.

*\*They all mean Eternal.*

**VISQUEEN** is *versatile*—it adapts to many different types of packaging, seals readily with heat or can be tied, taped, sewn or stapled. **VISQUEEN** bags *open easily* to keep packaging lines at top speed.

Finally, strong **VISQUEEN "C"** is the printable polyethylene. It takes print brilliantly to promote your brand name.

See a **VISQUEEN** converter. He'll be glad to help you with your packaging problem, and he's backed by **VISKING's** superior know-how. Just use the coupon to get his aid.

**Important!** **VISQUEEN** film is all polyethylene, but not all polyethylene is **VISQUEEN**. **VISQUEEN** film is produced by process of U. S. Patents No. 2461975 and 2632206. Only **VISQUEEN** has the benefit of research and technical experience of The Visking Corporation, pioneers in the development of pure polyethylene film.

THE VISKING CORPORATION, BOX H10-1410, Plastics Division, Terre Haute, Indiana

Please send me names of **VISQUEEN** converters serving my area.

Name \_\_\_\_\_ Company \_\_\_\_\_

Address \_\_\_\_\_ City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_



# ROWELL BOXES

*put your products on a pedestal*

Join the proud packagers  
who have Rowell create  
square and round set-up boxes  
that put their products  
on a pedestal.

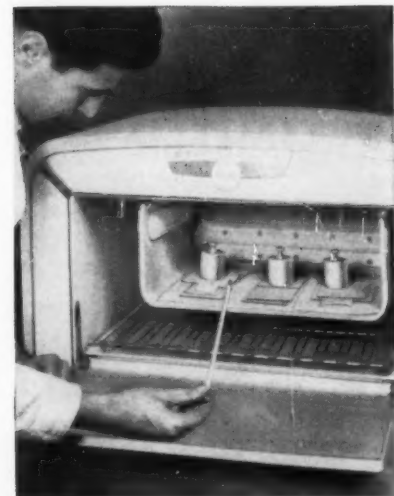
Manufacturers of Fine Paper Boxes

*E. N. Rowell Co. Inc.*

BATAVIA, NEW YORK



For better printing results...better press performance —



**BBD**

*quality-controlled*

**FLEXOGRAPHIC  
INKS**

You get more out of BBD FLEXOGRAPHIC INKS—more printability, more color-strength, more mileage, more productive press-time — because BBD puts more into them. For instance: from start to finish every step in the manufacture of BBD INKS is carefully checked and quality-controlled by technicians who are flexographic ink specialists. Quality-control at BBD begins with selection of the proper raw materials... continues through extensive laboratory formulations... and ends only when the finished ink matches our original standard in every respect. A costly extra ingredient you never see, this quality-control procedure is one of the important reasons why you get the best results from BBD INKS.

More information about BBD quality-controlled INKS for flexographic printing on film, foil or paper—together with printed samples — may be obtained by contacting your nearest BBD office or writing direct to Bensing Bros. & Deeney, 3301 Hunting Park Ave., Philadelphia 29, Pa.



*Bensing Bros. and Deeney*

SALES COMPANY

*Flexographic Ink Specialists*

PHILADELPHIA • CHICAGO • LOS ANGELES  
CAMBRIDGE, MASS. • MONROE, LA.

Export: McLAURIN-JONES CO., New York  
Canada: MANTON BROS., Toronto



The above illustrates just a few liquid or paste-filled packages and collapsible tubes in different shapes which have been produced by the  
**RADO PROCESS.**

We will pack your products in packages of your own design, decorate them with embossing, and print them in up to five colours.

# **RADO PACKAGING SYSTEM**

British Patent Nos. 599,174, 599,183 and 675,073 U.S.A. Patent Nos. 2,530,400 and 2,517,027

PATENTS IN 36 OTHER COUNTRIES AND FURTHER PATENTS PENDING

## **TECHNOPOL LABORATORIES LIMITED**

Tel: CLerkenwell 9452-9453

212 St. John Street, LONDON, E.C.1, England

Cables: Telabor, London

### **Packaging Service Stations:**

**S. AFRICA**  
UNIVERSAL PLASTIC  
PACKS (PTY.) LTD.  
43/44, Menteith House,  
Smith Street, DURBAN.

**SWITZERLAND**  
GISIGER & CO. A.G.  
Office: Felikanstrasse 37  
Zürich 1  
Tel: 051.27.24.47  
Factory: Obfelden.

**ITALY**  
GISIGER & PATRIZI  
S.p.A.  
Piazza Santa Felicita 4  
Firenze. Tel. 295040

**AUSTRALIA**  
DIE CASTERS LTD.  
126 Cromwell Street  
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Victoria

**GERMANY**  
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TECHNIK G.m.b.H.  
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Holzhausenstrasse 13.

**FRANCE**  
(Algiers, Tunisia, Morocco)  
S. E. P. (Soc. d'Emballages  
Plastiques)  
Office: 87 Rue Notre-Dame-  
des-Champs,  
PARIS 6e. Phone  
ODEON 71-33.  
Factory: 24 Avenue de la  
Republique, CHATOU,  
France. Tel: 274.

**AUSTRIA**  
Tupla Gesellschaft, Vienna  
IV., Wiedner Hauptstrasse 8  
Telephone: A 34067

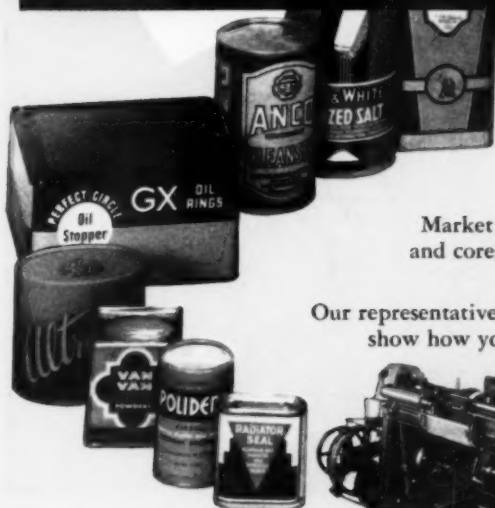
**BELGIUM**  
(Holland, Luxemb'g, Belgian Congo)  
S. E. P. (Soc. d'Expansion des  
Matières Plastiques)  
Office: 41 Rue de la Vallée,  
GAND.  
Tel: 594.96.  
Factory: 65-7 Rue de l'Agrafe,  
BRUSSELS.  
Tel: 22,19,32.

**EIRE**  
TECHNOPOL PACKAGING  
SERVICES, 81/2 Aungier Street,  
DUBLIN. Tel. Dublin 63524

# BATTLE AGAINST RISING COSTS WON BY USING...



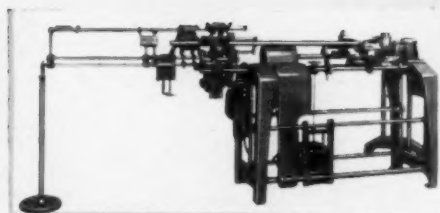
## PAPER WOUND CANS · CORES · TUBES



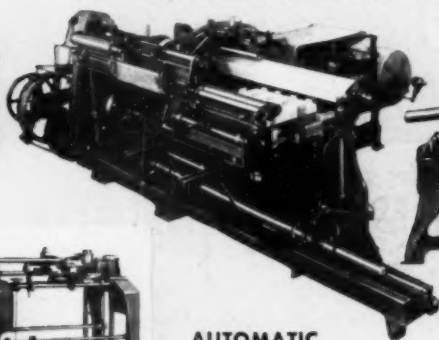
Many firms have definitely checked the rising costs of their containers by using paper wound cans, tubes or cores produced on Knowlton machines. As containers they are less costly to produce; they are stronger; they provide better protection of products from moisture, odors, weather or vermin whether in process, storage or transit.

Market and production tests have proved that paper wound cans, tubes and cores have greater sales, display and shipping value when compared with other containers.

Our representative will be glad to supply you with facts and experiences that will show how you can cut your costs. Write or call the nearest Knowlton office.

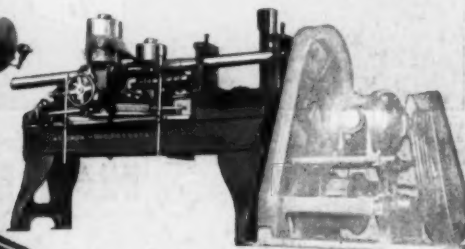


**NO. 77 KNOWLTON SPIRAL TUBE WINDER AND CUT-OFF** Winds paper tubes from 2 to 5 plies and from  $\frac{1}{4}$ " minimum to 1" maximum in diameter.



### AUTOMATIC CONVOLUTE PAPER CAN WINDER

Winds paper can bodies from  $1\frac{1}{4}$ " to 8" in diameter on the round and from  $1\frac{1}{2}$ " to 8" across diagonal corners on irregular shapes such as square, rectangular, oval, etc.



### NO. 4 SPIRAL TUBE WINDER

Winds paper tubes from  $\frac{3}{4}$ " minimum diameter up to the following diameters according to number of plies: 2-5 plies, up to 10" diameter; 3-11 plies, up to 8" diameter; 12-22 plies, up to 6" diameter. Can be furnished with cut-offs and glue stands to fit manufacturer's particular needs. Optional machines for cutting tubes in single or multiple lengths, rough or finished cores, or cutting light and heavy side walls up to  $\frac{1}{2}$ " thickness.

## USES FOR CONVOLUTE AND SPIRAL WOUND PAPER TUBES AND CANS

**CORES** for Toilet and Towel Tissue, Paper Mill Rolls, Textiles, Gummed Tapes, etc., Hygienic Supplies.

**CANS** for Household Products; Powdered Milk, Cocoa, Dry Cereal, Spices, Baking Powder, Salt, Popcorn, and other dry foods; Detergents, Cleaners,

Medicinal and Pharmaceutical Supplies, Powdered Soap.

### INDUSTRIAL AND COMMERCIAL PRODUCTS:

Automotive Parts, Machinery Parts, Manufacturing Supplies, Military Supplies, Ammunition Containers and Electrical and Radio Coils, Feminine Fancies; Cosmetics, Dusting Powder, Girdles.



ROCHESTER, NEW YORK

BROOKLYN TORONTO, CAN.  
45-53 Beaver St. 260 Richmond St., W.

BOSTON  
637 Massachusetts Ave.  
(ARLINGTON)

CHICAGO  
9 S. Clinton St.

Pacific Coast Representatives  
H. W. BRINTNALL CO.  
Los Angeles, San Francisco



## HARD TO PLEASE

You'll look a long time before finding a group of men as hard to please as the paper technicians in the KVP laboratories.

Just say the word and they'll start getting choosy — for the sake of *your* product, *your* packaging program, *your* sales. Somewhere in the wide variety of KVP Papers they'll find the grade — or develop a new one — that's perfect for protecting the wholesomeness of your product.

Out of conferences like this have come some of the most successful package programs in modern merchandising. Successful because the product is *protected* and *promoted* at one and the same time — thanks to KVP

artists who team up with the technicians to add colorful, sales-stimulating package designs.

The KVP team is always ready to tackle new packaging problems. Do you have one for them? Send in the particulars for recommendations. No obligation, of course.

### KALAMAZOO VEGETABLE PARCHMENT COMPANY

Parchment, Kalamazoo, Michigan

BRANCH AT DEVON, PA. ASSOCIATED COMPANIES: KVP CO. OF TEXAS, HOUSTON, TEXAS — HARVEY PAPER PRODUCTS CO., STURGIS, MICH. — KVP CO. LTD., ESPANOLA, ONT. — APPLEFORD PAPER PRODUCTS LTD., HAMILTON, ONT.; MONTREAL, QUE.

The World's Model Paper Mill



FOOD PAPERS — For Protection and Sales Appeal





## FOR STEADY ACTION

...for steady packaging performance  
**J&L STEEL CONTAINERS**  
**ARE ON THE TARGET**

When you specify J&L Steel Drums and Pails you are assured of maximum protection for your product. In terms of "steady action" you can depend upon J&L because:

- 1 J&L Drums and Pails are made from high quality J&L Steel Plate.
- 2 J&L Drums and Pails are made with care and accuracy in every detail.

You can obtain J&L Steel Drums and Pails through plants located in leading industrial centers. You'll find J&L service fast and efficient. Call the J&L office serving your community.

The J&L line includes all types of Closures and Finishes. Bright, colorful decorations may be reproduced to your specifications. Heavy-duty ICC Drums. Light-gauge Drums, 55, 30 and 15 gal. capacity and 100-lb. Grease Drums. Lightweight Drums for Chemical and Powdered Materials. 1-10 gal. capacity Steel Pails for Foods, Chemicals, Oils.

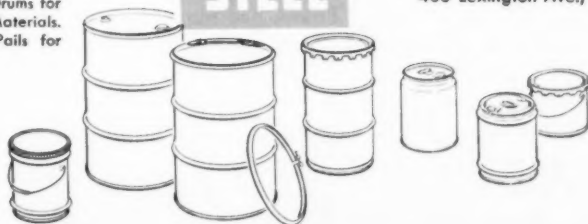


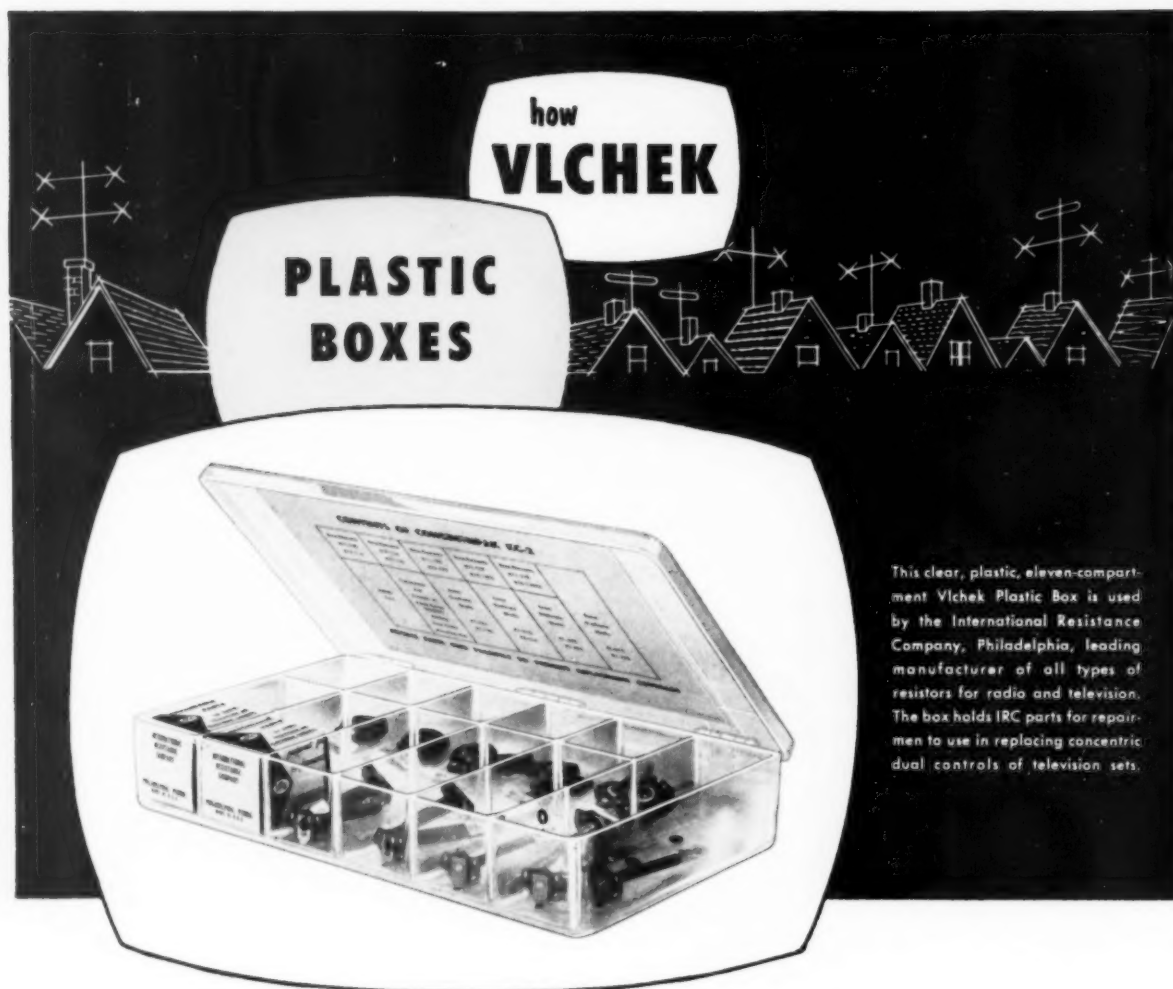
**Jones & Laughlin**

STEEL CORPORATION — Pittsburgh

CONTAINER DIVISION

405 Lexington Ave., New York 17, New York





This clear, plastic, eleven-compartment Vlc hek Plastic Box is used by the International Resistance Company, Philadelphia, leading manufacturer of all types of resistors for radio and television. The box holds IRC parts for repairmen to use in replacing concentric dual controls of television sets.

## Perform a Dual Purpose..

### SELLING

Crystal-clear, these handsome, sturdy boxes show off the television repair parts to advantage—each part labeled and in its own compartment. Well displayed, the products are already half sold. "One of our best sellers" is how IRC feels about these packages.

### SERVICING

The boxes are handy—easy to use. Ideal for "after-use" purposes. When the parts are gone, repairmen use the boxes to hold a myriad of small parts separated and organized. Furthermore, the boxes constantly remind the user of IRC parts.

Standard Vlc hek Plastic Boxes are made in eight standard sizes with 548 different compartment arrangements. Special boxes involving variations in size, shape, color, interior design or hinge design, are also available—often at stock box economy.

Drop us a line for suggestions on packaging your product and an estimate of cost.

THE VLCHEK TOOL COMPANY • 3001 East 87th Street • Cleveland 4, Ohio



## Not when you use KIMPAK\* 301 !

New KIMPAK 301 is the practical solution to appliance surface scratching and other marring damage. KIMPAK 301's ability to shield the fine finish from abrasive high spots on the inner walls of cartons and blocking and bracing members of crates makes it the ideal protective agent in an appliance package. And KIMPAK 301 costs no more than ordinary materials. It is specially designed to prevent the three major causes of scratching:

**1. Abrasiveness of the inner spacers.** Kimpak 301 provides a scratch-free, non-disintegrating, compressible barrier between inner spacers and the appliance finish. Its conformability ensures a snug package.

**2. Dust, dirt, cinders that sift into the container.** The combination of high creping and porous structure—exclusive with KIMPAK—traps dirt, grit or cinders, which may lodge between the packaging material and the surface.

**3. Abrasive action of harsh packaging materials.** KIMPAK 301 is soft and non-abrasive . . . free from wood splinters, dirt and other abrasive materials. No lumps, hard glue spots or stiff wrinkles.

Scratching is but *one* of many problems encountered in appliance packaging. These problems are solved with KIMPAK 301. For more details, contact the KIMPAK distributor in your area, or mail coupon below.

### SPECIFY KIMPAK 301 TO SOLVE THESE INTERIOR PACKAGING PROBLEMS:

Scratching  
Pressure-marking  
Staining  
Corrosion  
Conformability  
Ease of handling  
Appearance  
Disintegration

Whatever your protective interior packaging requirements, there is a Kimpak specification that does the job . . . better!



A Product of  
**Kimberly-Clark**

KIMBERLY-CLARK CORPORATION  
Neenah, Wisconsin

Dept. MP-24

We would like to learn how new Kimpak 301 can provide better protection at lower cost for our products. Please send complete information.

Name

Firm Name

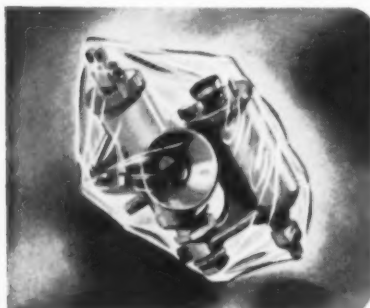
Street Address

City  Zone  State

**FLEXIBLE  
TRANSPARENT**

**Dio** *thene*  
(POLYETHYLENE)

**OFFERS YOU**



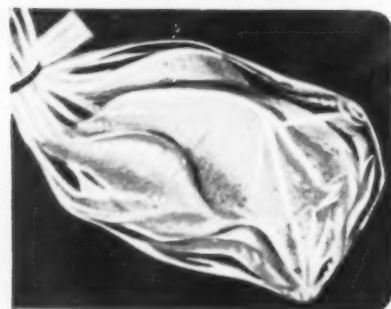
#### WAREHOUSE TOUGHNESS

Tough and flexible, DIOthene is ideal for packing goods such as instruments, machinery and textiles. Because it stretches it is neither easily burst nor punctured, and small cuts do not tear across the sheets.



#### ALL-HAZARD PROTECTION

Your goods are safe when packed in DIOthene for it is unaffected by acids and alkalis; insoluble in all known solvents at room temperature; liquid proof; powder proof; moisture-vapour proof; virtually non-inflammable. DIOthene drum liners are ideal for packing chemicals.



#### CLINICAL CLEANLINESS

DIOthene is sterile and non-toxic, and cannot be improved upon as a food packing. NO plasticiser is used in its manufacture and the purest products can be wrapped indefinitely with no fear of contamination from within or without. Frost-resisting, DIOthene remains flexible at sub-zero temperatures.

We can offer you DIOthene bags and DIOthene drum liners to required sizes and thicknesses, flat and shaped, for quick delivery. Our special printing on DIOthene in multicolour—including gold—guarantees excellent ink adhesion. We can add the qualities of DIOthene to paper, board, foils, or fabrics by coating or lamination—infinite possibilities!

We make, convert, and print DIOthene all under one roof. Send us your enquiries: ask for more details. Write or phone today.

### FLEXIBLE PACKAGING LIMITED



A SUBSIDIARY COMPANY OF TRANSPARENT PAPER LIMITED, MAKERS OF DIOPHANE CELLULOSE F.L.M.

(Dept. 16), 6 ARLINGTON STREET, ST. JAMES'S, LONDON, S.W.1

Phone: GROsvenor 5711/4 Grams: Transpaper, Piccy, London

AGENTS THROUGHOUT THE WORLD



#### SALES APPEAL

Transparent, and with a rich silky sheen, DIOthene has strength, eye-appeal and touch-appeal. Your sales mount when you wrap your product in DIOthene.

#### PROFITABLE ECONOMY

Rigid, heavy, returnable containers are old-fashioned and expensive, costing perhaps 2/- each. The DIOthene equivalent—featherweight and expendable—costs about 2d. The saving in space and weight alone can halve your freight charges. No invoicing of empties, either. Cut costs—pack in DIOthene!



#### PUT IT IN A





# H-A PACKAGE DESIGNERS



## AT WORK...



Every H-A container, whether specially designed or one of H-A's popular stock families, is consumer planned.

Your engineers and ours can get together on packaging efficiency, but Mrs. Consumer has the final word when it comes to sales. Here at H-A, we observe Mrs. Consumer... we note her preferences and her dislikes. The results of these findings become part of every H-A glass container.



*There's an H-A sales office  
and an H-A factory near you*

**HAZEL-ATLAS GLASS COMPANY**

Wheeling, West Virginia

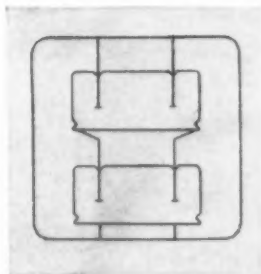


# the secret of Showcase Selling is **AUTONEST**

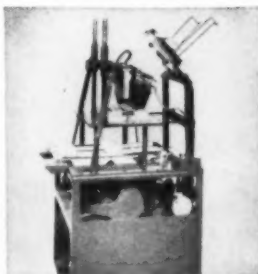
©U.S. Pat. 2584967—Canadian Pat. 491675

*...the individual Sales Showcase that combines maximum product display with outstanding product protection!*

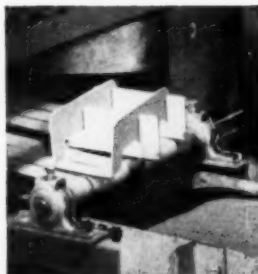
## **HERE'S HOW AUTONEST WORKS!**



Sturdy AUTONESTS are die-cut to your specific requirements



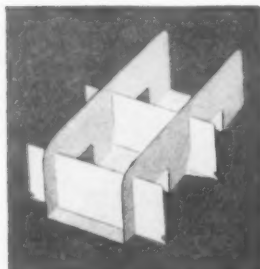
Safe, efficient, dependable AUTONEST equipment cuts costs, builds sales and speeds packaging operations.



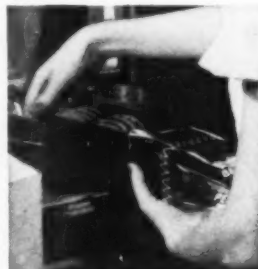
Handy AUTONESTS are formed, locked and ready for packaging operations as quickly as sixty per minute!



Your product is swiftly slipped into partitioned compartments—a protective Sales Showcase!



... automatically formed and locked in individual sections



Filled AUTONESTS glide into sparkling cellophane wrapper for unique display visibility!



Attractive identifying bag tag is affixed to gleaming AUTONEST package in final step.



Completed AUTONEST package is sealed and ready for shipment—a glamorous display-sales unit to invite buyers!



... that combine actual product visibility with complete protection!

**Can AUTONEST Solve YOUR Packaging Problem?**  
**... LEARN MORE ABOUT IT TODAY!**

Review your packaging procedures. If you discover any packaging situation where the cost-cutting, sales-building applications of AUTONEST might mean greater profits... write, wire or phone today! An experienced packaging consultant will be happy to call on you at your earliest convenience.

# **AUTONEST**

**CHICAGO CARTON COMPANY**  
4200 South Crawford Avenue, Chicago 32, Illinois

*For the*  
**PACKAGE SUPREME...**

# *Colorcast* BOX WRAP

DRUM FINISHED

MADE ONLY BY THE CHAMPION PAPER AND FIBRE COMPANY





DUJOUR COSMETIC KIT





---

The COLORCAST line of box wrap is available in white and a range of clear brilliant colors: Canary Yellow, Royal Blue, Christmas Red, Christmas Green, Patent Leather Black, and Ivory.

COLORCAST Drum Finished Box Wrap is made by  
**THE CHAMPION PAPER AND FIBRE CO.**

*General Office:* HAMILTON, OHIO

# Here's 'WELLCOME' relief from motion sickness handily packed in a MILLER BOX



If motion sickness makes your holiday traveling an ordeal, you'll appreciate the new drug discovered by Burroughs Wellcome & Company. It prevents or relieves motion sickness without inducing drowsiness. And it's fittingly packed in a sample box from Miller—for mailing to physicians.

Like all Miller boxes, this one is designed to be *the one best box for the purpose*. It's rigid and strong to protect the contents, light and compact for easy, economical mailing. Its appearance reflects the character of the product and its maker. Here is an indication of why Miller boxes won four awards in the 1953 Annual Set-Up Paper Box Competition.

The box-building skill which won these awards can help solve *your* packaging problems. For products ranging from \$100 hats to delicate cosmetics, from fine confectionery to surgical

instruments, Miller provides suitable and economical packaging. We have the skilled handwork and machine capacity to meet your every requirement. Call or write; we'll send a representative to you without obligation.

WALTER P. MILLER CO., INC.  
452 York Avenue, Philadelphia 23, Pa.

We'll be glad to talk packaging with your representative, with the understanding that no obligation is involved. Please have him 'phone ahead of time for an appointment.

Name .....  
Firm Name .....  
Address ..... Telephone .....  
City ..... Zone ..... State .....



designers and manufacturers of set-up paper boxes

Telephone MAket 7-2600

# HERE





# WHERE COSTS ARE HIGHEST--- STANDARD-KNAPP SAVES YOU MOST

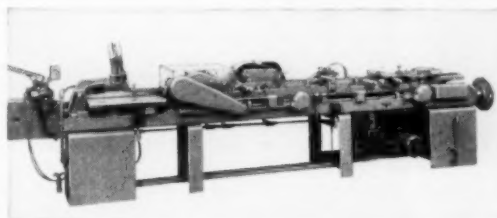
First, we don't waste your time in getting down to essentials. Our engineers talk your language, quickly understand your requirements and accurately interpret them in terms of package handling equipment.

The next point of savings is in the price of the equipment itself. We have a broad and versatile line of standard models and long experience in adapting them to specific requirements. You get a "customized" installation at the lowest possible cost.

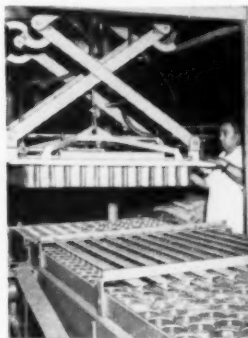
Next, we save you time in realizing the benefits from Standard-Knapp equipment. We train your operators, get them to know and like the machines, provide them with easy-to-read operating instructions.

Then, you can count on a strategically located service organization for prompt and competent assistance in keeping Standard-Knapp equipment at full efficiency.

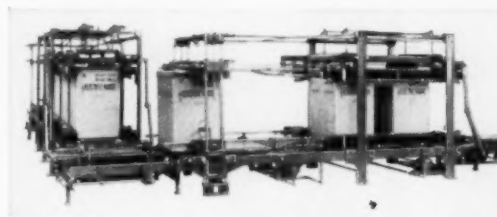
To save most where it counts the most, call in Standard-Knapp — whether you need a complete line of packaging equipment or a single machine.



**CARTONING AT HIGH SPEED** in huge volume on Standard-Knapp 180 Carton Inserter helps hold profit margin on new merchandising package for photographic film.



**EMPTY CAN PALLETIZING SYSTEM** devised by Standard-Knapp speeds and simplifies delivery of empty cans to user, expedites introduction of cans into filling and processing lines. Another example of Standard-Knapp pioneering in better packaging methods.



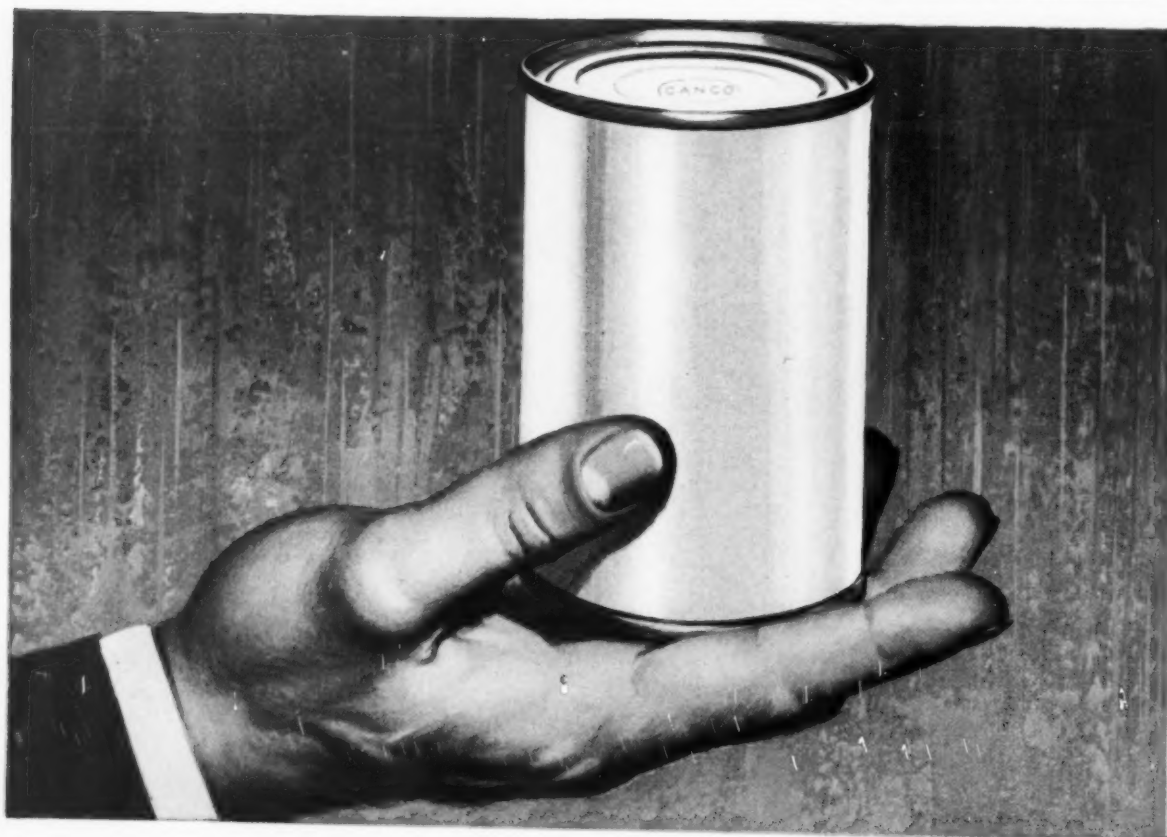
**50% SAVING** in packaging costs of electric ranges has been realized through development of giant automatic Standard-Knapp gluing and sealing machine for mammoth corrugated cartons.

**IN PACKAGING--** STANDARD-KNAPP EQUIPMENT IS  
AUTOMATICALLY MORE EFFICIENT

## STANDARD-KNAPP

DIVISION OF EMHART MFG. CO.

### PORTLAND, CONNECTICUT



# The cans are different, but not the customers

Between the "hole and cap" can—now a collector's item—and today's streamlined Canco food container is a half century of progress.

Yet, many of the companies which purchased Canco's early cans are still on Canco's roster of staunch friends. Perhaps *your* company is one of them.

Why have so many companies—large and small—*consistently* done business with Canco? Because their experience has proven this:

**Canco offers** an unequalled combination of able people, conveniently located plants, research leadership, technical assistance, delivery service, quality and experience. As a result, packers get *what* they want . . . *where* they want it, and *when*!

If your company is not enjoying Canco services, isn't *right now* the time to start?

*Go first to the people who are first!*

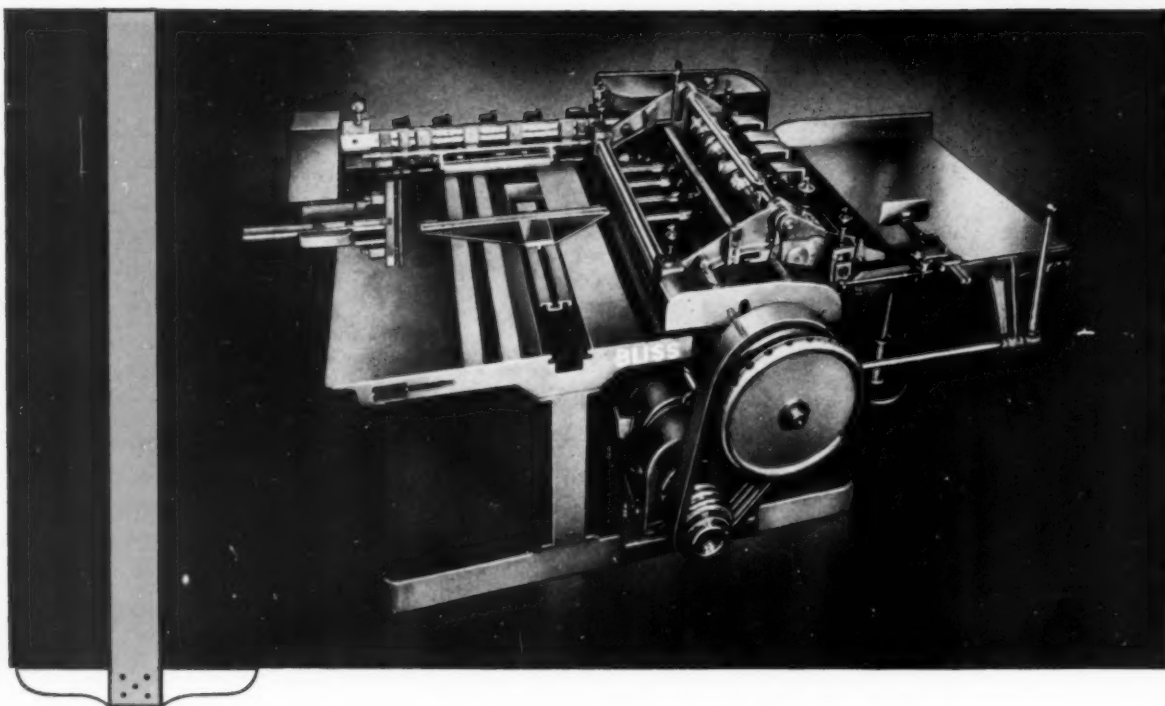
## AMERICAN CAN COMPANY



New York, Chicago, San Francisco; Hamilton, Canada

These are but a few of the familiar meat cans that have provided housewives with a wide variety of easy-to-serve dishes—given a tremendous boost to sales of meats and meat products.





## PERFECTLY REGISTERED SHEETS begin with PERFECTLY SQUARED SHEETS

**...and the Bliss Duplex Squaring Slitter is your answer to perfect squaring...**

When you begin with micrometer tolerances there's seldom a chance of spoiled litho sheets through poor register. And the unusually accurate gaging possible with the Bliss Slitter starts you off with perfectly squared sheets.

That means that right down the line—in all your production operations—you can hold far finer tolerances. You eliminate "multiplying" errors; you eliminate spoiled sheets.

You can also use the Bliss Slitter to cut body blanks: trim the sheets in the first operation and

slit the sheet into strips or large blanks on the second operation table.

And remember: the Duplex Squaring Slitter, like the other labor and time-saving equipment in the Bliss line, is designed and built by one of the oldest firms in the can and container field.

Bliss engineers will be glad to help you work out your production problems. No obligation, of course. Meanwhile, to learn more about the Duplex Slitter and other Bliss machines, write today for Catalog 36-A.

**E. W. BLISS COMPANY,**  
50 Church Street,  
New York 7, New York



# BLISS

on your machine is more than a name... *it's a guarantee*

BLISS CAN AND CONTAINER MAKING MACHINERY



SLITTERS



BODYMAKERS



FLANGERS



SEAMERS



TESTERS



STRIP FEED PRESSES



*A master package by*

# PACKAGE PRODUCTS



## NELLY BEE PRODUCTS

**Product:**

Mercerized Jersey Loops.

**Description:**

Gusset-type bag printed  
in yellow and black on .0015  
Visqueen C-1 polyethylene.

**Sales Status:**

Distributed through  
department stores and chain stores  
for home craft use.

Here's another example of the versatility of Package Products Company in meeting the needs of industry for made-to-order packaging for textiles, foods, toys, and other products requiring merchandising in flexible films. Complete facilities are available for plain or printed bags of polyethylene, cellophane, or Pliofilm — or bags of paper-film combinations. The printing is of course by "Rotochrome."

**Package Products Company**  
Charlotte, North Carolina

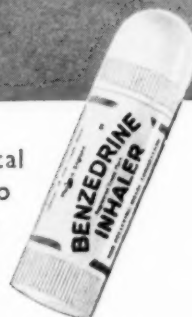
PACKAGE  
**PP**  
PRODUCTS®

# *John Dale* OF ENGLAND

*for quality containers*



Collapsible tubes, metal containers, closures to your exact specification—and made with p-r-e-c-i-s-i-o-n



## AGENTS IN INDIA

HOARE MILLER & COMPANY LIMITED,  
5 FAIRLIE PLACE,  
P.O. BOX NUMBER 63,  
CALCUTTA, I.

**JOHN DALE**  
LIMITED

PRODUCING FINE FOLDING  
CARTONS FOR LEADERS IN  
INDUSTRY FOR FIFTY YEARS



## EMPIRE BOX CORPORATION

GARFIELD, N. J., 70 Outwater Lane • CHICAGO, ILL., 17 E. Chestnut St.

3 GREAT PLANTS TO SERVE YOU



Garfield, N. J.



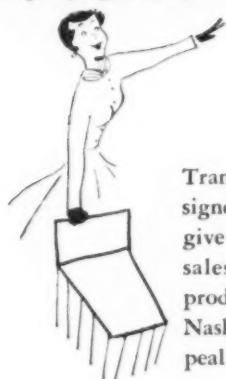
South Bend, Ind.



Stroudsburg, Pa.



# Produce packaged by **NASHUA** produces more sales!



Transparent produce bags, designed and printed by Nashua, give fresh vegetables the *impulse* sales-advantages other grocery products have long enjoyed in Nashua sales wraps. The eye-appeal of colorful printing. The merchandising-appeal of guaranteed freshness. *Plus* the advertising value of having your brand name always in front of the customer.

Let Nashua packaging experts help improve your product's appearance at point-of-sale. From printed polyethylene or cellophane bags to carton wraps, Nashua's packaging experience is unequalled. For proof, write for samples of wraps Nashua designed and produced for leading marketers, or simply send us your packaging problem.



## **NASHUA CORPORATION**

DEPT. A2, 44 FRANKLIN STREET  
NASHUA, NEW HAMPSHIRE

Everything in Flexible Packaging that Sells

### DESIGN / PRODUCTION

Printed Film • Waxed Wrappers • Box Papers  
Box Stays • Gummed Papers • Heat Seal Papers  
Flocked Products • Party Papers • Printed Bands  
Corrugator's Tape • Sealing Tape • Moistening  
Machines • Technical Paper Products •





# MODERN PACKAGING

February 1954, Vol. 27, No. 6



THIS IS A DRUG STORE? Walgreen's latest 100% self-service store looks like a cross between a supermarket and a department store. This is drug-chains' booming answer to supermarket encroachment.

## The check-out drug store

It sells almost everything, including drugs, and it offers both a challenge and an opportunity for packaging

What's happening to drug-store merchandising? Does the increasing trend to self-service set-ups dictate a change in packaging? How do drug-store requirements differ from those of the self-service food market? Are there new product opportunities?

The fact is that the drug supermarket, complete with shopping carts and check-out counters, is growing

rapidly. And even in those stores that lack turnstiles, the principle of self selection is almost universal today, placing the same display and self-selling burden directly on the package itself.

From a study of the current situation, it is an obvious "must" for every manufacturer selling to the drug field to place his packages under immedi-

ate and continuing scrutiny to make sure that they meet all the requirements of this new rough-and-ready type of marketing.

Self-service drug package requirements are basically the same as those of self-service food packages. Manufacturers who have been selling to both fields and have learned their lessons in the grocery supermarket are



**SHOPPING BASKET** and bargain atmosphere encourage the drug shopper to walk out with extra dollars' worth of unplanned purchases.

in a fortunate position. Others had better learn pretty fast.

Right off the bat, it should be understood that the word "drug" as applied to today's drug store—whether it is completely or partially self service—is more than ever a misnomer. The prescription department usually remains inviolate and most drug stores do not sell food (other than the kind that is consumed at soda fountains). But otherwise the drug store—particularly the new supermarket type—is a hybrid general store, resembling the department-store bargain basement in layout, the hardware store to some extent in merchandise and the Piggly Wiggly in selling method.

Yet there are differences which should be noted carefully.

The new-product opportunities are immense. While the grocery operator has expanded rather reluctantly into non-food lines and has turned such items as housewares, toys and clothing over to rack jobbers<sup>1</sup> with the injunction that they must be fast turnover and high profit, the typical drug operator buys and stocks his own merchandise and is avid for any eye-catching item that will turn a profit in a reasonable time. There is, in fact, apparently no restriction on what the drug store will sell—so long as it is well packaged and easy to handle and display.

In effect, the drug store, beset by competition on all hands for its one-

time principal stock in trade, has joined the food industry in the trend back to the general store<sup>2</sup>—but with its own special approach.

Five years ago MODERN PACKAGING examined a self-service drug operation in Detroit<sup>3</sup> which was one of the first of its kind. At that time packaging of most of the products handled showed little change; only the selling method was different. Now let's see what's been happening—and what still needs to be done—to packaging.

Fortunately, an excellent case study is available in the well-established and smooth-running self-serv-

<sup>2</sup> See "Back to the General Store," MODERN PACKAGING, Oct., 1952, p. 85.

<sup>3</sup> See "Self-Service 'Drugs,'" MODERN PACKAGING, Feb., 1949, p. 75.

ice-store operations of the Walgreen Co., Chicago, one of the nation's largest drug-store organizations, which itself controls a considerable amount of package design. Now operating drug outlets in all sections of the country, with total stores numbering 386, Walgreen's has 23 units classed as self service. Many of the new installations projected by Walgreen at this time are to be of the self-service type.

In the company's recently issued annual report for 1953, C. R. Walgreen, Jr., president, made this significant statement:

"We in the drug field, like virtually all retailers, must find methods by which higher wages, shorter hours and a high level of expenses in general are held in proper operating ratios. To accomplish this, large, high-volume stores are necessary. Prices have to be low to the customer to at-



**SIMPLE CARRIER** permits the shopper to examine these mugs, tells a fast but forceful story concerning the product and sells four at a time. Carton provides space for sell copy and pricing.

tract and maintain volume in a highly competitive market. We believe that the trend toward self service—applied to the extent possible in our line of business—is highly desirable."

Of those Walgreen self-service stores opened during the past year, some were at new locations while others were conversions from conventional-type stores. A number of the new stores are in "drive-in" developments which contain one or more department stores and very extensive shopping facilities.

The variety of merchandise handled by some of Walgreen's new self-service-type units is a revelation. The company's new Racine, Wis., store, for example, opened a few months ago,

contains over 3,500 sq. ft. of total floor area, with some 25,000 different items on open display in over 40 mass-merchandised departments. The new Gary, Ind., unit includes 6,200 sq. ft. of over-all floor space. In Peoria, Ill., another recently opened self-service Walgreen drug store even incorporates a "Bargain Basement" and includes 45 mass-merchandised departments offering everything from sporting goods and lamp shades to gold fish.

#### Store layout and display

Although most Walgreen stores and a great many of the independent Walgreen Agency druggists utilize self service to some extent in certain departments, Walgreen's identifies as "self service" only those stores having a specific self-service section, divided off from the rest of the store by means of entrance gates and check-out

time to encourage customer traffic throughout the self-service area. If too many high-volume items were concentrated near the entrance to the department, many shoppers might be inclined to pick up two or three needed products and proceed directly to the check-out counter. Walgreen stores utilize departmental layouts which facilitate customer circulation through several sections before reaching the check-out counters, thereby exposing patrons to more merchandise and laying the groundwork for impulse purchases. This type of sales-generating traffic movement is further developed through periodic re-arrangement of some sections and seasonal modifications by means of which sporting goods, gifts and other products may be featured at strategic periods.

Intensive utilization of space is characteristic of the Walgreen self-

service unit. Easily accessible shelving along the walls is supplemented by gondola-type display fixtures similar to those found in food supermarkets. Aisles are generous, to permit free circulation of patrons and shopping carts. Store lighting is usually of the ceiling fluorescent-tube type. Even store columns are made into useful selling aids by covering them with peg boards on which many types of products may be displayed by hooks and hangers—an invitation to bagged merchandise with perforated headers.

An interesting bit of psychology is followed in building store displays. Walgreen merchandising men point out that consumers are often hesitant about being the first to remove merchandise from a full, symmetrical display; they hate to spoil the display and perhaps they feel that such a display indicates other shoppers are not

### fast copy are essentials of super-drug packages



**CARDING** makes an ideal self-service package for small hardware and household items in the drug store as elsewhere. Many are die cut for hanging display.



**WINDOW CARTONS** show and sell cute toys by the thousands on impulse.



**SEEING IT** on cellophane-wrapped card reminds shopper who might not remember she can use syringe tubing.

counters. In these stores shoppers are supplied with baskets or carts. Electronically operated entrance gates in many of these stores automatically swing open when the customer steps upon or wheels a shopping cart across a special type of floor mat which completes the circuit. These robot-type gates swing inward only, so that patrons can leave the department only by way of the check-out counters.

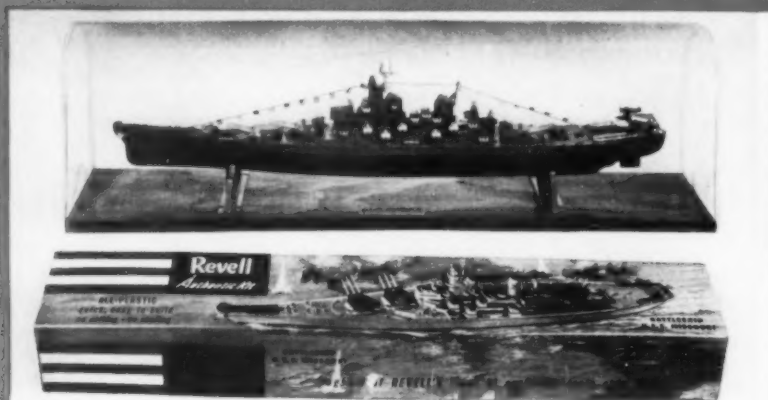
Walgreen merchandising executives have devoted a great deal of study to store layout and merchandise location in the self-service outlets. In general, it might be said that the practice followed—similar to that of the food supermarkets—is to make the merchandise convenient and at the same

**HOSIERY RACKS** at Walgreen's are adjustable on peg-board backing. Cellophane package contains a heavy board which discourages folding for concealment.





## Displaying a sample permits a blind package



**PLASTIC CASES** for samples are widely used in conjunction with mass display of closed packages, giving all the inspection necessary to stimulate sales. The hobbyist sees exactly what he can build from the parts in the battleship kit. The woman picks her lipstick shade without opening a package and feels the quality of the sample rain boot.



interested in the merchandise. For this reason, many of the Walgreen store displays are set up with a slightly "shuffled" look right at the beginning, giving the impression that some packages have already been removed.

Stacking reserve supplies of merchandise practically to the ceiling atop the wall racks impresses shoppers with the sheer volume of items stocked and stimulates buying action. Further buying incentives include frequent use of over-the-wire banner or pennant displays announcing special sales events and posters calling attention to specific bargains.

Walgreen's has found, as the A&P found long ago in its field, that much of the sales magic of self service lies in the creation of the proper "bargain" atmosphere.

### Package design

Certainly not all the packages now displayed in Walgreen self-service stores have been consciously designed for this type of selling. Many of the items are still the same as those sold in conventional-type drug stores. However, many of the manufacturers who supply Walgreen's are giving much closer attention to package de-

sign for self service than in the past; and within the Walgreen organization, packages for the many Walgreen-manufactured drug products and cosmetics, and sundries made under their private labels, are now definitely designed with self service in mind. This broad program covers both redesign of current packages and creation of new packages where required.

Before turning to examples of individual packages particularly well suited to self-service operations, a few general principles are in order. They represent some of the "yardsticks" useful in determining the effectiveness of a package for self-service drug stores. As such, they are also applicable to many other types of retail self-service operations.

One of the most important of these principles is product visibility. Walgreen experience strongly emphasizes the desirability of packages which permit the actual merchandise to be seen by the prospective purchaser. Such packages may take a variety of forms, ranging from open carding, transparent bags and overwraps to window cartons which combine product protection and visibility. Consumers are less likely to open up packages for merchandise appraisal if they can

see it clearly through the wrap or container. This saves time and also helps to keep stocks in order.

Walgreen's feels so strongly about visibility that on a number of products which are supplied in a blind package, such as toys, sundries and certain cosmetic items, the self-service stores follow the practice of displaying an opened package beside the regular stock on the shelves. The sample product may be overwrapped by the store with transparent material to protect it against soil in handling. In other instances, the entire contents of a package may be removed and mounted on a display board beside the merchandise, as was done with a combination game board containing a number of small parts.

For the very popular construction kits now sold for building scale-model aircraft, cars, boats, etc., product visualization is achieved by a related display of a finished model dramatically enclosed within a transparent plastic cover. An accompanying photograph shows a typical ship-model display which does a very effective selling job in Walgreen self-service stores, together with its colorful, well-designed package.

Displays of storm boots with one of the boots applied to a model foot provide another typical example of product visualization which expedites sales in self-service drug outlets. With appliances and similar merchandise sold directly in factory cartons, unpackaged samples can be used for display.

### Legibility and display

Another important packaging principle followed in the Walgreen program is that of package legibility.



"The package should serve as a billboard," says a company package designer. "It must be inviting in appearance and the sales message must be short and sweet." Since customer decisions in self-service shopping are usually made in a few brief seconds, the need for clear-cut package identification and summarized sales features may be readily appreciated.

In designing packages for self-service merchandising, Walgreen is insisting upon at least 10-ft. identity for even small packages. To reach this objective, greater emphasis must be placed on such factors as package shape and size, color combinations, selection of typography and brevity of sales points. Some of these features are apparent in the Walgreen packages illustrated.

Walgreen Rubbing Alcohol Compound, packaged in 1-pt. bottles, supplies an excellent example of some of these principles in action. Previously, this product was sold in a rather tall, narrow bottle with cramped label space. On the previous bottle and label, the product name was difficult to read at a distance and sales features, in smaller type, were even less legible under these conditions. The label, printed mainly in two shades of green, lacked the visual impact of the new label, which includes red, white and blue and is wider, accommodating larger lettering of product name and other type matter. The new bottle also is easier to grasp in the hand and less likely to tip over.

The terse labeling treatment desirable for self-service items is further illustrated by Walgreen's redesigned label for witch hazel, used on the same style of pint bottle in which rubbing alcohol is sold. Dominant feature of the label is the specific product name, with the Walgreen identification in type of smaller size. Three brief phrases—"For body massage . . . for after shaving . . . for tired burning feet"—immediately hit the eye of the shopper with sales appeals anyone can understand and appreciate. Two additional sales points—"Violet-ray processed" and "Triple distilled"—appear in smaller type. Although important, they are not regarded as initial attention catchers with the shopper motivation of those mentioned above.

Walgreen packaging and merchandising men believe that family-design labels, with their unifying influence, have a place in self-service drug stores, but that over use of this packaging approach results in

monotonous shelves with reduced sales appeal. The theory here is that variety in label designs and colors gives the store a more stimulating atmosphere and is more likely to encourage additional purchases.

With certain types of merchandise, however, Walgreen's is using labels of related color and design quite effectively. One example is the company's group of "Tidy" deodorants and related preparations. All the products in this group employ a gray-and-white diagonal stripe motif for the package background, highlighting the Tidy logotype in reverse white letters against a deep red rectangular panel. In a specific product group such as this, the related design has been found useful in creating additional sales for other products in the line. Among the items in this group are Arctic cream deodorant in a flat opal-glass jar, deodorant powder in sifter-type can, stick deodorant with chlorophyll, spray-type deodorant in a polyethylene squeeze bottle and depilatory cream packed in a glass jar.

Two types of aerosol products which have enjoyed an excellent self-service record in Walgreen outlets show the importance of using dramatic labels with terse copy to catch the eye of the passing shopper. They are the Dolph Insect Bomb and Po-Do Speed Shave. In its latest version, the insect bomb has been changed over to a tapered-top aerosol container having an improved style of spray valve. The essential features of the lithographed label, showing a cloud

of the spray being dispensed with a bomb-like effect on insects, have been retained, with larger lettering and improved typographical arrangement. On the new package, the word "Kills" is played up in larger type, with the names of several types of insects appearing immediately beside it.

Similarly, the Po-Do Speed Shave container features a billowy cloud of lather against which the product name appears in prominent letters. Here again, the trade name is subordinated so that the words "Speed Shave" dominate all other type on the display panel. On the back of the can appears a line drawing illustrating how to hold the container for use and easy-to-understand numbered instructions on how to use the product.

### Keep it up to date

In the non-clerk type of selling, a package cannot afford to appear "dated." It must reflect the fact that manufacturers of the item are alert to the developments in their field. A case in point is Walgreen's Chlorophyll Tooth Paste, which is sold in an eye-catching red, green and white package. With the vast amount of publicity from various tooth-paste manufacturers regarding anti-enzyme cleansing action, Walgreen's own package is up to date with a reference to their paste's anti-enzyme action printed directly on the carton. In self service, such apparently minor points can have an important bearing on sales results.

Self service for some types of products creates other problems. Lipstick

**BANNERING BRAND NAMES** aids selection of cosmetics. Prices are clearly marked. Space above wall fixture displays bargain-basement housewares.



is an example. Faced with the necessity of showing prospective buyers the exact selection of colors available in its Sardi Color Toned lipstick, without allowing them to sample it on the back of the hand, Walgreen stores use a sturdy sealed "showcase" type of display fabricated of clear acrylic plastic, in which four lipsticks are held and the four shades clearly visible. Nevertheless, even in self-service outlets, a trained cosmetician is on hand in the cosmetics department to counsel patrons on their selections.

Ladies' nylon hosiery can also be well adapted to self-service operations.<sup>4</sup> Walgreen's formerly sold hosiery in "blind" paperboard boxes holding

ter in a visibility-type package. A case in point is flexible rubber tubing. Formerly sold in a blind carton, the tubing is now coiled on a die-cut backing board and overwrapped with cellophane. With this package, the prospective buyer can see the quality of the tubing and the length supplied. Important sales features—"free flow, molded, corrugated and socket end"—appear at the corners of the card.

#### Combination packages

Walgreen's has found that self service affords excellent opportunities for multiple sale of related items—provided that the items in the assortment are intelligently selected to fill a genu-

inely well in single-unit sales, but really came into their own when offered in sets of four in a handy tray-like carry-home carton which suggests use in the home and injects a new note of merchandising glamour. When items are combined in a single package, care must be exercised to see that they are in acceptable multiples and well mated as to end usage.

Through imaginative packaging, Walgreen's has had excellent sales success with stationery. Gay Notes—cleverly decorated folded sheets for brief, informal correspondence—were formerly sold in a closed carton. Now the notes are attractively packaged in a printed tray with clear cellophane

### Two techniques in Walgreen's own labels



**TOP BILLING** in the case of the fast-selling aerosol products, left, was given to product identification, with brand name secondary. For Tidy deodorants and depilatory, right, it was considered more important to build up brand name.

three pairs of hose, with each pair in a separate cellophane envelope. Now the hosiery is sold in individual printed-cellophane sealed envelopes, so designed that the color may be seen directly through the window section, which is shaped like a feminine leg. An additional feature is the use of a heavy cardboard stiffener in the package which discourages anyone from trying to fold the package up and conceal it in a purse.

To control pilferage on relatively expensive vitamin preparations and related drug items, these are either handled in the prescription department, easily accessible to the self-service section of the store, or stocked adjacent to that department, where the pharmacist can watch them.

Walgreen's experience indicates that many sundry items will sell bet-

ter in a sales-stimulating manner.

Walgreen's combination attachment set provides an excellent example. Designed to extend the usefulness of the household hot-water bottle, this set includes a length of rubber tubing, a screw-in attachment for the bottle and several types of attachments for the other end of the tubing. Formerly, this combination product was offered in a blind package. The redesigned container recently adopted consists of a paperboard base with die-cut shelves through which the attachments are inserted. This in turn slips into a paperboard sleeve having a transparent window section through which all items in the assortment may be seen. It is believed this package will result in additional sales.

Ceramic breakfast mugs have sold well in a combination package. These handy, well-designed mugs moved

overwrap which permits the shopper to see the merchandise and has been effective in building increased sales. Within the tray, the stationery is arranged in three stacks, forming a flat, easily carried package with adequate display area.

A package for dish cloths will be accompanied by sample swatches of the dish-cloth material in the store display. Thus customers may "sample" the material without actually touching the cloths in the carton.

A new rubber glove printed-sleeve pack permits the rubber to be felt for quality and is perforated so that it may be hung on peg-board displays.

Since not all packages can be displayed at eye level in self-service drug outlets, multisided visibility is an asset. This emphasizes the importance of designing packages so that they will attract favorable notice and register clearly with the fast-moving

<sup>4</sup> See "Help Yourself Textiles," *MODERN PACKAGING*, July, 1952, p. 77.



**EVEN THE COLUMNS** that support the ceiling are used to sell. In this new Walgreen store, columns are surrounded by peg boards with hooks from which shelves or individual items can be hung. The hang-up package is important in all self service selling.

shopper whether seen from the front, top or side. Such design versatility insures that they will win attention regardless of the position given them in store displays. This feature is particularly important for small packages which might otherwise be "lost in the shuffle."

In designing a package which will move well in self service, the manufacturer cannot afford to overlook factors relating to the convenience and utility of the package in actual use. If "plus" values can be built into the package which make it easier for the buyer to use, that is all to the good, since they build buyer satisfaction and repeat sales.

An excellent example of this kind of design thinking is the new-type package just adopted for Walgreen's Luxury brand black and menthol cough drops. Departing from the traditional box, which takes up considerable space in the purse or pocket, Walgreen's have turned to a foil-wrapped roll similar to those used for mints. The convenient rolls are sold from attractive counter-display cartons.

#### The outlook

Powerful forces are encouraging the extension of self service in conventional drug outlets and the adoption of virtually 100% self-service in most new stores. One of the most important factors is the rapid growth of

unified outlying shopping centers, where customers can buy every type of product from food and drugs to furniture and sporting goods without leaving their own neighborhood. Such developments—and there are scores of them springing up all over the nation—usually include at least one large drug store, as well as one or more retail food outlets.

When patrons arrive at one of these shopping centers in the family car (and park in the convenient parking lot), they usually do not limit their shopping to one or two small purchases. They come to take advantage of the wide variety of merchandise available, the attractive prices and the convenience of being able to shop in one location for a big share of all their food, drug and household requirements. Self-service selling is the rule in most of these retail outlets.

There are indications that the separate drug store has advantages over a self-service drug department subsidiary to a food supermarket. The food chains themselves seem to be thinking this way. In Jersey City, N.J., Safeway Stores—the nation's second

largest retail food chain—is quietly operating, on an experimental basis, a self-service drug store which is physically separated from the Safeway supermarket by a parking lot and even bears a separate name, that of the Mercer Drug Co.

Experience has shown that any package which sells well in self service also lends itself well to a clerk-type selling operation. Since this is true, the advisability of designing the package with self service in mind is inescapable.

Although drug stores which may be strictly classed as self-service outlets may still be numbered in the hundreds, there are many thousands of other drug outlets throughout the nation where a goodly portion of the sales is handled on a self-service basis. And the trend throughout the industry is toward more and more of this type of drug selling. It is worth watching.



**LEGIBILITY at 10 ft.** is Walgreen's standard for self-service labels. Note how bottle was lowered and broadened in redesign to give bigger and bolder space to the product name.

**CONVENIENCE** in packaging is carried to cough drops. Walgreen's found customers liked this roll package better than a box. It is more compact in pocket or purse and easier to use.





EIGHT VARIATIONS of sizes and shapes of bottles and labels are handled with ease on First National's new fully automatic labeler.



## A quick-change labeler

First National's new automatic machine, one of the first of its kind in this country, has some unusual features

One of the first American production models of a new low-cost, wide-range, continuous-motion, high-speed, automatic labeler is now operating at the plant of First National Stores, Somerville, Mass., handling eight different sizes of olive jars with quick change-over and unusually solid adherence of the label to the jar, achieved, the company says, through a unique system of flexible pressure-pad transport which holds the label to the container through two full machine cycles.

The machine, capable of labeling 120 jars a minute, or 54,000 in a 7½-hr. working day, at First National replaces a semi-automatic labeler rated at only 15 per minute. With the semi-automatic labeler, it was necessary to run the labeling operation on a two-shift basis to label a day's production. The new labeler, at top speed, can match the 12-hr. production of the older machine in about an hour and a half.

This type of continuous-motion machine was first introduced in Canada about three years ago and 35 are said to be in operation there. Design improvements have been incorporated in the American model.

First National's olives are packed in glass jars of diverse size and shape

with rolled-on aluminum screw caps, the jars ranging in size from 2 to 7½ oz. Six of the jars are labeled under the "Finest" brand name and two under "Jumble-Pac," all using a plain type of label stock adhered to the jar with cold glue. Actually, the machine is said to be capable of handling any size from 2 oz. to a gallon and it is designed to use thermoplastic or hot-melt adhesive if desired.

Closed olive jars in this operation are wet when they reach the labeler, adding to the complications of obtaining good label adherence. The First National machine is successful, however, because it holds the label under pressure long enough for glue and moisture to permeate the fibres of the label and kill its "fight." A flexible pressure-pad transport comes down over the label and holds it firmly in place through two complete machine cycles.

First National finds that wet jars are readily handled by the machine because the glue is applied to the label rather than the bottle. And an automatic infeed of the machine eliminates manual handling of wet bottles as was necessary with the former semi-automatic labeler.

A proved method of label feed, featured for many years on a standard

type of wrapping machine, is employed on First National's new machine.

In operation, the bottom label within a magazine is removed by a rocking suction plate. When the leading edge of a label is turned down, it enters the mechanical gripper jaws of a rotating drum. As the drum rotates, it carries the label over a wheel which is continually supplied with glue. Continuing past the glue wheel, the label is rolled onto the bottle or jar as it passes in a horizontal position.

In the next stage a flexible pressure pad—one of seven which revolves continuously—comes down on the label, makes it conform to the shape of the bottle and sets up the final adherence. This differs from other methods of label feed in that there is no reliance upon the tack of the glue for label feed.

Many types of bottle labelers, of course, apply glue to a picker arm which then picks the label out of a magazine. When this method is used, great care must naturally be taken to keep the glue sufficiently tacky for conveyance of the labels.

At the discharge end of the machine, the bottles are returned to a standing position and delivered upon a dead plate.



Rapid adjustability for the eight different sizes of the olive jars is counted as an important advantage by First National. Adjustments are described as simple, the company estimating that it requires approximately from five to 15 minutes to make a complete change from one size of jar to another. Instructions to operators for making size changes are summed up as follows:

Raise or lower pressure pads according to size of jar; this is done by hand wheel. Change position of conveyor chain to position label. Change position of infeed belts to accommodate jar. Adjust discharge mechanism. Adjust label box for size.

To simplify the procedure, pressure-pad holders are made so as to provide a quick change of rubber-band position. For instance, to change the pressure pads from the setting for a round bottle to that for a tapered tumbler, it requires about 30 seconds to snap out the seven bands and snap them back in proper position, ready for operation.

First National's labeler was, besides its speed and efficiency, constructed with food-plant sanitation in mind. Stainless steel was introduced, for example, in the sections close to the bottles, the main cover pan and the bottle-conveying chain. Beyond these uses of stainless steel, other sections of the machine have been treated for corrosion resistance.

Ball bearings, it is reported, have been introduced to an extent not customary with most labelers. Sealed ball bearings are lubricated for life and are easily replaced when required. There are very few points requiring periodic lubrication.

From a convenience standpoint, all working parts are well above floor level, enabling maintenance men to hose down the floor without wetting the machinery. Since the main frame of the machine is stainless steel, the main conveyor may be hosed down with water if a weak bottle should break while in the machine. This, of course, saves considerable time.

A single girl operator attends the labeler itself, installing labels in the label box, supplying glue and helping pack cases.

Shipping cartons are packed in units of a dozen and two dozen, depending upon the size of the jar.

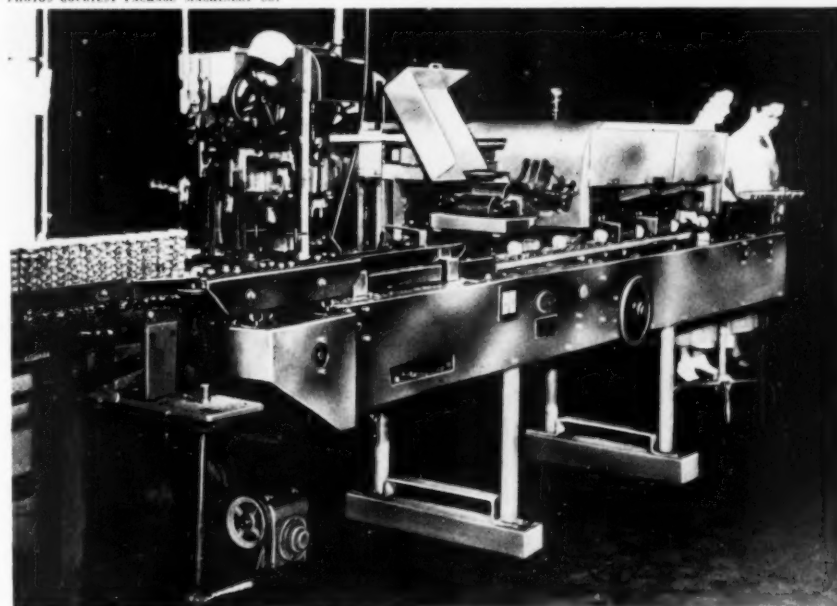
According to the manufacturers, the machine may be purchased without the automatic feed at a cost said to

be no greater than that of any semi-automatic labeler. This offers the small packager an opportunity for growth, as the automatic feed may be added at any time that increased production may justify it.

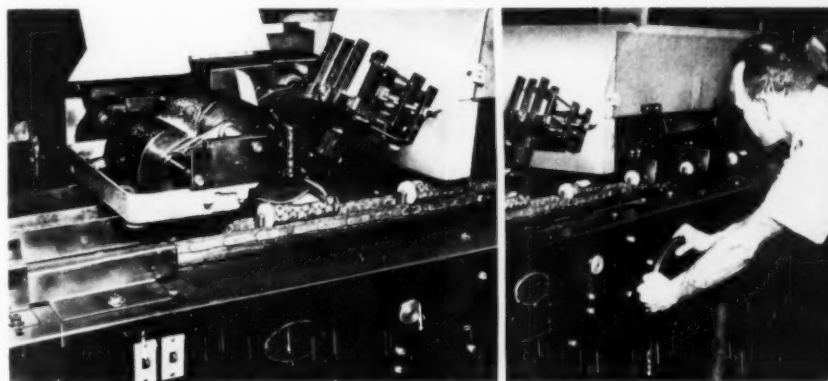
CREDITS: "Thrifty" labeler, Package Machinery Co., East Longmeadow, Mass. Labels, Libbie Printing Co., 465 Cambridge St., Allston 34, Mass., and Na-

tional Label Co., 19 St. & Indiana Ave., Philadelphia 32, Pa. Glass jars, Knox Glass Corp., Sheffield, Pa.; Hazel-Atlas Glass Co., 15 & Jacob Sts., Wheeling, W. Va., and Thatcher Glass Co., Box 265, Elmira, N. Y. Screw caps, Phoenix Metal Cap Co., 2444 W. 16 St., Chicago 8; Anchor Hocking Glass Corp., 20 Glass Ave., Lancaster, Ohio, and Crown Cork & Seal Co., Inc., Eastern Ave. & Kresson St., Baltimore 3, Md.

PHOTOS COURTESY PACKAGE MACHINERY CO.



**CONTINUOUS MOTION** is secret of machine's smooth performance at up to 120 per min. Movement is from left to right, from optional automatic feeder, which lays bottles lengthwise for trip through label gluing and applying unit (center, with cover raised) and compression unit.



**GLUE UNIT** (left) picks up label from bottom of hopper at right, applies a film of cold glue and deposits the label in correct position on bottle. In the compression unit (right) a form-fitting rubber-band pad settles on each bottle and firms label into position, holding it through two machine cycles as the pad rides with the conveyor. Long holding time insures a firm bond, even on wet jar. Operator is turning hand wheel which raises or lowers pressure pads to suit jar size.

# ULTRA-LOW-PRESSURE

A new Zonite principle permits the use of unprotected glass, thereby opening the field wide to toiletry products

The efficient, sales-potent aerosol has taken many dramatic steps forward during its short but spectacular growth to acceptance as a standard packaging form. Now, as the result of new development work conducted by the Zonite Products Corp., a new concept—the ultra-low-pressure aerosol—has been pioneered to permit the use of unreinforced glass containers and open up additional, exciting new frontiers in push-button packaging.

Basically, the significance of the latest aerosol concept advanced by Zonite lies in the fact that a means

has been found to reduce pressure to levels safe even for a glass bottle and yet produce an extremely fine and effective spray mist. Practical application of this ultra-low-pressure principle was first demonstrated in a cologne aerosol packaged in a 2-oz. glass bottle by Zonite for export sales<sup>1</sup>. More recently Primrose House, under arrangement with a filler licensed by Zonite, has introduced its Chiffon Cologne, the first ultra-low-pressure all-glass cosmetic aerosol to be sold in this country, and, mean-

<sup>1</sup> See "Miniature Glass Aerosol" MODERN PACKAGING, Dec., 1953, p. 194.

while, Carven-Parfums has brought out its new "Mis-s-s-t-i-fier" cologne aerosol. Numerous similar small-size aerosols for personal products, in both glass and metal, will soon reach the market and an extremely optimistic outlook for multimillion-unit expansion seems warranted.

These new aerosols employ a pressure ranging from 11 to 15 lbs./sq. in., gauge reading, at room temperature, whereas pressures ranging from 25 to 40 have previously been considered the lower limit of the conventional "low-pressure" aerosol. Safety requirements have dictated the use of metal containers, or some kind of safety sheath for glass containers, where pressures at ordinary room temperature exceeded 20 lbs. Zonite itself pioneered a fibreboard-sheathed pint glass aerosol for its Larvex moth spray, which was successfully marketed last January.<sup>2</sup> The logical approach in aerosol packaging originally was to assume that the degree of spray atomization depended to a large extent on the amount of pressure provided. Thus, where a fine spray was needed, pressures were sought that automatically ruled out glass and other frangible containers such as thin-walled, intricately shaped aluminum containers.

The ultra-low-pressure principle in effect completely reverses this thinking by demonstrating that spray performance is not necessarily dependent on the degree of pressure. It thereby opens the way for perfumes, anti-perspirants and other cosmetics with an alcohol base, along with shampoos, foam shave cream, certain medical products and similar items to adopt cosmetic-type glass containers if desired. From the standpoint of design appropriateness alone, such containers open an entirely new field of

<sup>2</sup> See "The First Glass Aerosol," MODERN PACKAGING, Jan., 1953, p. 90.

SEE-THROUGH is a wholly new appeal made possible by the use of clear, unprotected glass, pressurized, by the new system, at less than 15 p.s.i.g. Primrose House's "Chiffon" Cologne Mist was first on U. S. market.



FROSTED GLASS is favored by Carven. It has slightly greater strength than transparent glass, although both have adequate safety margins at the new ultra-low pressure range.



# AEROSOLS

opportunity to the cosmetic packager. In addition, the novelty of an aerosol that you can see through and which operates "mysteriously" is certain to intrigue consumers.

Dressing-table attractiveness, with all its proved potential for merchandising cosmetics, is not the only asset of the glass aerosol. The unique suitability of glass for a host of critical products, as well as the freedom to package in small sizes, also loom large in the advantages provided by ultra-low-pressure packaging.

## The new approach

Zonite's application of the ultra-low-pressure principle<sup>3</sup> is based on the discovery that the degree of saturation of propellant into a solution of aliphatic alcohol and water (or other liquids) influences the degree of atomization or fineness of spray that can be produced. The ideal degree of saturation, in turn, can be achieved by carefully controlling the concentration of alcohol combined in the active ingredient formulation.

As explained by Dr. Francis A. Mina, technical director of Zonite, saturation of the propellant in the alcohol solution converts each spray particle into a sponge-like droplet that has soaked up many even tinier droplets of propellant. When the sponge-like droplet is released into atmospheric pressure, the many beads of propellant "explode" simultaneously and atomize the spray particle, or, in effect, blast the sponge-like drop of cologne or similar product into a fine mist.

If, on the other hand, the droplet of active ingredient is not saturated with propellant, it will, in effect, be like a solid drop containing only one bead of propellant. When the solid droplet is exposed to atmospheric pressure, the single bead of propellant will "explode" and some of the fragments will redissolve in the droplet before they effect complete es-

<sup>3</sup> Patents for this system have been applied for by Zonite Products Corp. and the following loaders have been licensed to produce ultra-low-pressure aerosols: Continental Filling Co., Danville, Ill.; Stalford Pressure-Pak Corp., 319 W. Pratt St., Baltimore, Md., and Fluid Chemical Co., 878 Mt. Prospect Ave., Newark, N. J.



PHOTO COURTESY CARVEN-PARFUMS.

**INTO THE BOUDOIR** goes the aerosol, with revolutionary development of ultra-low-pressure system which extends push-button convenience to unprotected glass in true cosmetic style. A gentle mist of perfume delights feminine user. Carven is third brand of cologne to adopt package.

cape. Thus the atomizing process is delayed and dissipated by a graduated release of energy.

The saturated droplet achieves almost immediate full-force release of energy because the multiple beads of propellant take up so much space and exert so much pressure in the droplet that blasted fragments of propellant are not able to redissolve.

The sponge-like combination produced by saturating the active ingredient with propellant thus utilizes maximum "explosive efficiency" and thereby reduces the number of pounds of pressure that must be specified for effective operation.

In its development work, Zonite employed aqueous solutions of aliphatic alcohols, e.g., alcohol 39-C, and dichlorotetrafluoroethane (Freon 114).

All dilutions were made by volume and the specific gravity was checked.

The miscibility of the propellant with different water solutions of ethanol were then observed and pressures were determined for a range of concentrations at different temperatures.

Miscibility of the propellant in the concentrations at a temperature of 70 deg. F is:

- 11.5% in 80% ethanol
- 20.0% in 85% ethanol
- 37.8% in 90% ethanol

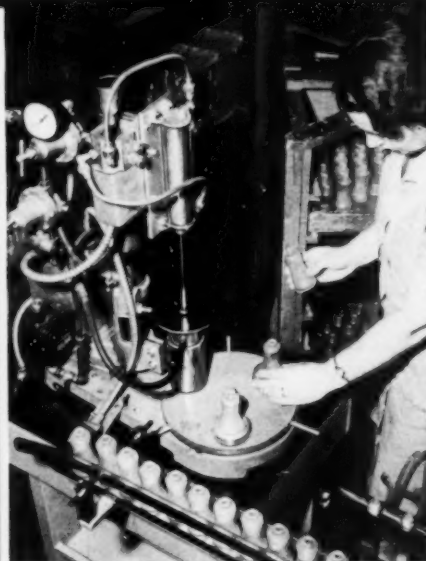
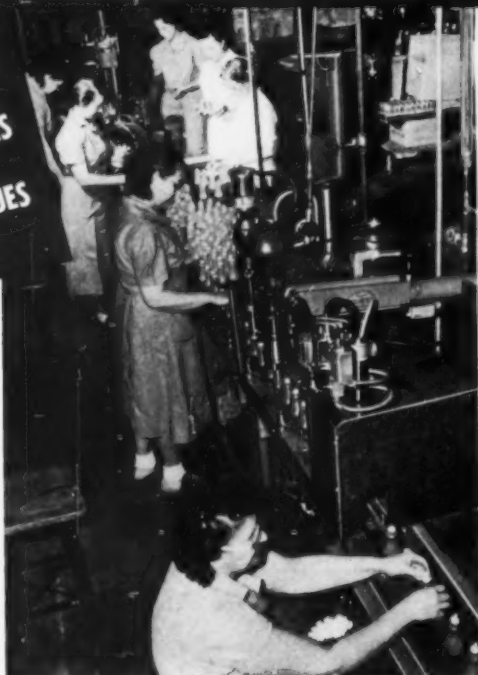
The optimal practical concentration for dispensing ethanol-base preparations by means of the ultra-low-pressure system is 87%, Zonite has concluded.

Gauge pressures obtained at 70 deg. F. for each of the various ethanol solu-



## ULTRA-LOW-PRESSURE FILLING REQUIRES SPECIAL TECHNIQUES

OVER-ALL VIEW of pioneering filling line used at Zonite for Jasmin cologne. From back, stages are: air-blast cleaning and pressure testing; filling, valve assembly, air evacuation and propellant loading, then testing and capping.



**SPECIAL DEVICE** is machine that blasts 150-lb. air pressure into empty bottles to detect any weakness in the glass and screen out cracked or faulty containers.

tions containing 25% by volume of propellant are:

- 13.7 p s. i. g. in 85% ethanol
- 12.1 p s. i. g. in 90% ethanol
- 11.4 p s. i. g. in 95% ethanol
- 7.8 p s. i. g. in 100% ethanol

### Container requirements

The bottles required for unprotected glass aerosols, even when the new very low pressures are involved, naturally must be given careful consideration from the standpoint of breakage and consequent risk to the user. Bottles developed for Zonite employ a strong commercial grade of glass in designs that assure uniform distribution of glass. The various glass aerosols for cologne so far on the market use bottles shaped somewhat like an hour-glass. Five variations of the basic shape have been developed, including 2-oz. narrow-waisted ovals and rounds, 3½-oz. narrow-waisted ovals and rounds, and a 4-oz. narrow-waisted wide-mouth bottle suitable for foam-type products.

Hundreds of filled bottles were subjected to drop tests to determine their safety under conditions of use. Results were compared with the performance of commercially bottled carbonated beverages used as a control.

In general, the glass aerosols were found to be from 11 to 33 times safer

than the beverage bottles, all of which broke on the first 4-ft. drop to a concrete floor. The frosted-glass bottles were found somewhat more resistant to breakage than the clear glass and full bottles broke slightly more readily than those two-thirds or one-third full, although the full bottles withstood an average of more than 10 drops. Temperature had no significant effect on breakage, the over-all average being about 14 drops at 130 deg. F. and about 18 at 70 deg. F.

Little difference in the shattering of glass, the velocity of fragments or the distance traveled was noted between the 2-oz. aerosols and the control bottles, except that the tendency of force for the aerosol bottle was horizontal, seldom rising above 1½ ft., while the glass from the beverage bottles had a tendency to shatter upwards as well as to travel horizontally. In all cases, the horizontal distance that fragments traveled averaged between 6½ and 8 ft.

These studies showed the glass aerosol safe for use in the home and industry and, combined with findings in regard to proper formulation, made practical the introduction of unprotected-glass aerosols.

It is significant to the packager that pressure below 15 p.s.i.g. is not classifiable under ICC regulations as a

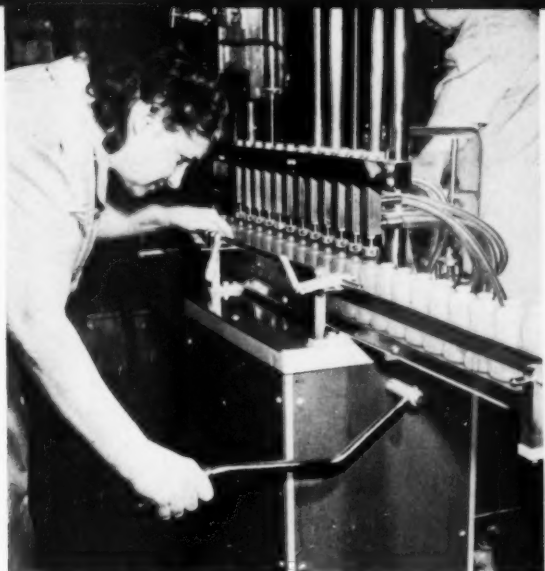
compressed gas. These aerosols therefore can be shipped without restriction by truck or rail, providing products are maintained outside the scope of the ICC definition of a "pressurized flammable liquid."

The various cologne aerosols, even though they contain alcohol, have successfully passed the flame, open-cup and drum tests recommended by the Bureau of Explosives for determining the flammability of self-pressurized dispensers. As a matter of fact (and this is testimony to the efficiency of the new system), one problem to be considered is to avoid spray-head design that will produce too fine a mist, for in such cases a flash-back can be produced that will prevent the aerosol from passing the flash test. The present Zonite packages have passed this test.

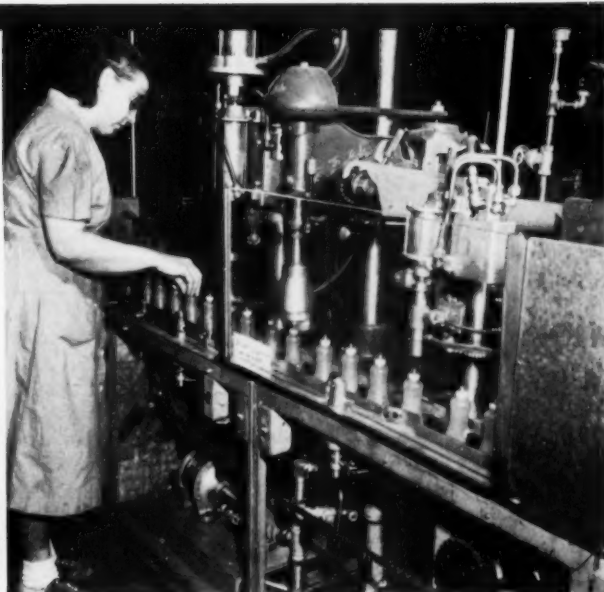
### Valve and loading

In the valves employed by the Zonite cologne aerosol, all components that come into contact with the product are non-metal, including a polyethylene dip tube and spray head, a nylon stem and washer, and rubber gaskets—each material being chosen to avoid problems of corrosion, warping or shrinkage and assure specific function as a valve part. The valves are mounted in a roll-on-type alumi-





**FILLING** is done by 12-nozzle automatic vacuum filler. Operator (observing fill level) is depressing lever that lowers nozzles, starts and breaks vacuum. The production rate on this pioneer line is 30 bottles a minute.



**VALVE ASSEMBLY** is inserted manually. Equipment to right of operator then automatically evacuates air from the bottle and seals the roll-on ferrule. Propellant is loaded through the valve under pressure by the loading head at far right.

num ferrule, which can be lacquered or anodized to provide a choice of attractive colors.

The valve assembly is so designed that it permits pressure loading by means of a loading stem that inserts down into the valve. This method reduces the Freon loss frequently experienced when the pressure loading is done by means of a loading hood placed around the entire valve head. Reduction of propellant losses is especially important where Freon 114 is involved, since this type of propellant is considerably more expensive than the conventional high-pressure Freon.

The ultra-low-pressure aerosol can also be filled with refrigerated liquid propellant, except in those cases where the active ingredient will be adversely affected by low temperature.

On Zonite's filling and loading line for its ultra-low-pressure cologne aerosols, bottles are (1) air cleaned, (2) pressure tested, (3) filled by an automatic 12-nozzle vacuum filler, (4) receive valve assembly mounted in the roll-on aluminum ferrule, (5) have air evacuated automatically, (6) have ferrule rolled on, sealing the valve and bottle, and (7) have Freon injected under pressure gauged at about 450 lbs. This pioneer line, which must be

considered subject to further refinement, is designed to handle 30 bottles a minute. With the addition of an automatic capper, it could, reportedly, handle 60 bottles a minute.

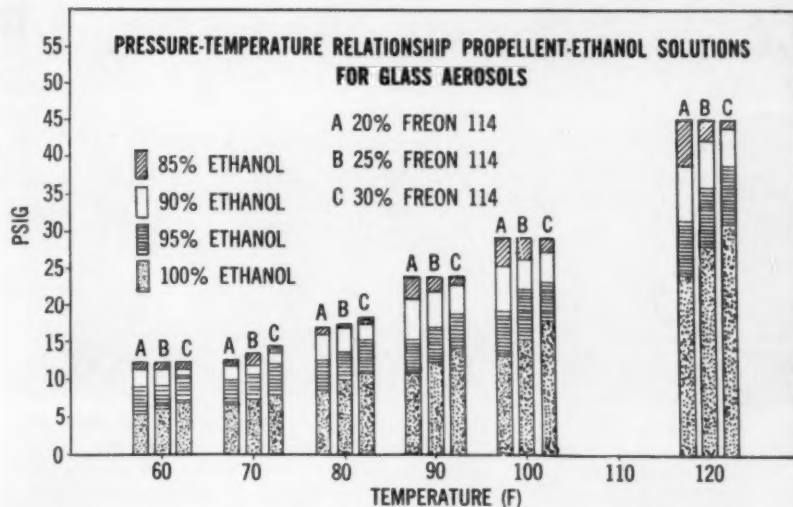
The air-pressure bottle tester at the start of the line injects a 150-lb. air blast into the bottles to screen out

cracked or faulty containers. The 150-lb. air test provides pressures three times as great as the maximum pressure the aerosol itself will develop at 130 deg. F.

Statistical quality control is maintained in regard to filling performance, for it is very important to main-

**CHART SHOWS** pressure-temperature relationships of four concentrations of ethanol mixed with different quantities of propellant. Note how pressures vary with ethanol concentration as well as with temperature.

CHART COURTESY ZONITE PRODUCTS CORP.





**FIRST** product in new ultra-low-pressure glass aerosol was Zonite's Jasmin cologne, sold only in Latin America. Pinched-in bottle shape and special glass give container utmost strength.

tain precise quantities where perfume or similarly expensive products are filled and also to prevent filling beyond specified capacity when Freon is added.

### Prospects

The ultra-low-pressure aerosol, in addition to the new challenges and opportunities it affords, must additionally be regarded as a case example of the accomplishments and rewards in prospect for the packager who is not content to accept current limitations in his field and is willing to persevere in his search for solutions to seemingly insurmountable obstacles.

Zonite's other contributions to the aerosol field include the all-plastic valve, developed in conjunction with a supplier for its Larvex three-phase spray, and the use of a catalyst (boilstones) to promote more rapid vaporization of the propellant.

The pilot line for Larvex aerosol filling and loading was designed for 100,000-unit capacity, but marketing response forced a schedule to turn out approximately 750,000 units during the first year of production. Recently the Larvex pressure line has been converted to fully automatic operation, with the exception of valve-spray-head insertion, which is still

done manually. Many of the features of this line are duplicated in the new line, as described above, for Zonite's Jasmin Cologne.

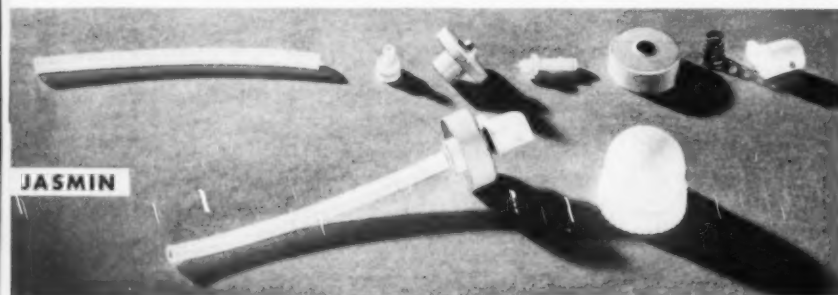
A new three-phase pressure package, Myna Window Cleaner, has recently been introduced and is now being marketed by Zonite. The new product employs a fibreboard safety sheath and is an aerosol type quite similar to the Larvex package. Other three-phase pressurized products are said to be under development.

In pioneering the three-phase aerosol, Zonite overcame the obstacles that stood in the way of aerosols for aqueous-type products that would not mix with Freon and therefore could not employ the conventional two-phase system that necessarily involved mixture, solution or emulsion of the propellant in the active ingredient.

Having solved several aerosol problems by means of original and hitherto unanticipated approaches, Zonite obviously has every reason to regard aerosol packaging as a highly versatile medium and one that has other secrets still to be unlocked.

Marketing of the new glass aerosols is still on a limited scale. The shortage of Freon 114 late last year, when the Atomic Energy Commission's requirements seriously curtailed civilian supplies, delayed volume production as well as the rush of several new products to market. Expanded facilities for Freon 114, scheduled for completion in April, are expected to end the shortage.

Consumer response in initial marketing of the colognes is said to be excellent. The ultra-low-pressure aerosols are apparently designed to give appreciable "mileage" in terms of both economy and efficiency. The attractiveness of the glass container has won immediate approval and operation is so simple and convenient that most users seem to believe the push-button itself produces the spray and do not stop to realize that a new type of aerosol is at their service.



**NO METAL PARTS** contact the product in the new glass aerosols; all contact parts of these valves are plastic or rubber. Aluminum ferrules may be anodized or lacquered. Two different makes of valve, as used by Chiffon and Jasmin colognes, are shown here. Big potential for glass aerosols is for hundreds of water-based products that would rust metal.

**CREDITS:** Bottles and sealing machine, Wheaton Glass Co., Millville, N. J. Valves, Calmar Co., 6800 McKinley Ave., Los Angeles 1, and Risdon Mfg. Co., Valve Div., Risdon St., Naugatuck, Conn. Freon 114, E. I. du Pont de Nemours & Co., Inc., Wilmington 98, Del. Filler, Packer Machinery Corp., 30 Irving Pl., New York 3. Air-evacuating, pressure-loading and testing equipment, Alpha Equipment & Machinery Works Co., 217 N. Desplaines St., Chicago.



**CLEAN LIP** is exhibited by bottle when it is lifted after pouring into glass. Polyethylene collar, developed by Roma at a reported cost of \$250,000, repels lingering drops that might run down bottle or drip on cloth.

## Dripless wine

Roma solves an age-old problem with a polyethylene collar fitted into the pouring lip of a conventional bottle

The after-drip from the bottle for centuries has created a problem wherever wine has been served. Yet any radical departure from the traditional package certainly would create consumer opposition.

Roma Wine Co., San Francisco, has neatly solved the dilemma with an inconspicuous polyethylene "collar" which fits over and inside the finish of a conventional bottle. The sharp lip of the collar cuts off the flow sharply when the bottle is lifted from the glass and the last drops flow back into the bottle rather than down the outside, over the label and onto the table cloth. And because of the molecular surface tension of polyethylene, which makes it antipathetic to most liquids, including wine, there is no troublesome drop clinging even to the lip of the bottle.

Polyethylene is, of course, completely inert and imparts no taste to

the delicate wines. Its smooth, waxy surface eliminates undue friction and provides easy removal and reseal of the threaded metal bottle cap. It helps to insure an original leakproof seal.

Although polyethylene fitments have recently become popular for shaker-type bottles, including those for A-1 and French Worcestershire sauces and La Choy sauces, this is believed to be the first application to a pouring bottle for drip prevention.

The original concept of the dripless wine bottle is credited by Roma to Stanford Wolf, executive assistant to the president, who took the idea to the company's glass supplier. Leading thermoplastic fabricators were called in and a three-way development program was set up with Roma's technologists.

Working out all of the details is said to have required two years of

experimentation and an expenditure of a quarter of a million dollars.

Once the design was decided upon, an Eastern injection molder was called upon to work out production details.

Sample cavities were then made up to provide pieces for final tests, while at the same time production molds were being completed. When the sample pieces were approved, all features of the approved sample were incorporated directly into the production mold and full production started immediately.

Details of the final assembly into the bottle have not been disclosed, but the collar apparently fits so tightly that there is no problem of lifting with the cap or falling out during the pouring operation. The collar fits inside over the top two threads of the finish and has a smooth surface. Cost figures likewise have been withheld, but as far as can be learned, there has been no increase in the wholesale price of Roma wines, which are merchandised as low-cost, mass-market products.

**CREDITS:** Bottles, Glass Containers, Inc., 1789 Montgomery St., San Francisco 11. Injection molded polyethylene fitments, Lumelite Corp., Pawling, N. Y., and American Molding Co., 355 Fremont St., San Francisco 5, using Bakelite polyethylene.

**DETAILS** of finish with the polyethylene collar in place. Note the thin lip of the injection-molded polyethylene piece.





Americans have an extraordinary fondness for meat. They eat approximately 60 million pounds of meat daily, on the average, and they spend roughly 24% of their food money for it. Over the past half century, Americans have been consuming approximately 150 lbs. of meat annually per person. During 1953 more than 23 billion pounds of meat were marketed, the end products of 21 million cattle, 10 million calves, 80 million hogs and 13 million sheep and lambs.

The role played by packaging in building the meat industry to its dominant position in the food field can scarcely be overemphasized. It is as important to distribution of meat today as was the development of dependable refrigeration a generation ago. An important part of this recent development is the growth of pre-packaging of fresh meats at the retail level. But that is a story in itself—and one that has been closely followed in MODERN PACKAGING.<sup>1</sup> This article is concerned solely with packaging at the meat-packer level, where progress on processed meat products has been equally significant if not quite so spectacular.

Although it was one of the earliest users of the can as a package for processed foods—Libby's corned beef having been a standard ration item during the Civil War—and has long packaged special items such as sliced bacon, the meat industry had made little further progress in packaging up to about 25 years ago. Then, with the advent of the self-service food

# MEAT

store, came the realization that meat products too could benefit from the better package protection, appeal, convenience and brand-name merchandising made possible by improved packaging materials and methods.

When it turned to modern packaging, the meat industry went into it with great vigor and purpose. In recent years it has furnished many outstanding examples of the finest principles of packaging.<sup>2</sup>

It is possible for today's shopper to purchase sanitarily protected, accurately weighed, trademarked, processed meat products in any food store in convenient form for ease of preparation and serving. Through informative labeling or visual features of the package, the busy housewife can see exactly what she is getting for her money and the number of portions obtainable from it. Fine, colorful illustration, recipes, serving suggestions and other useful information supplement the purely functional aspects of the package, providing a built-in sales appeal that pays off at the register.

<sup>2</sup> See "Armour Meat Products," *Packaging's Hall of Fame*, MODERN PACKAGING, June, 1953, p. 112.

<sup>1</sup> See "Meat Today," MODERN PACKAGING, Aug., 1952, p. 85.

**CANNED AND GLASSED meat products have won far greater consumer acceptance through both product and package improvement. Armour's line typifies the topnotch appetite appeal and strong, clean design treatment now prevalent throughout the meat-packing industry.**



The meat industry, in fact, in recent years has witnessed perhaps the most dramatic packaging progress of any phase of the food field.

Packer laboratories maintain a constant study of new packaging materials and techniques. In many packer organizations, all packaging activities are centralized under the direction of qualified individuals or a special packaging committee. On the sales side, alert merchandising officials and design experts maintain a close scrutiny over package appearance and its influence on sales results. Labels are frequently redesigned to insure their conformity with changing sales concepts and competition.

Packaging has brought meat products out of the shadow of anonymity and into the light of retail store displays, where they can compete on equal terms with other food products.

## Growth of the industry

Statistically, the volume of packaging materials now required by the meat-packing industry reaches astronomical proportions. Although no precise breakdown of these materials is available, individual examples give some idea of the scope. For example, the Trade and Label Division of the Meat Inspection Service, to which Federally inspected meat processors must submit their labels for advance approval, has on file in Washington 205,000 labels covering 9,500 different products put out by 1,000 meat packers under 7,500 brand names.

Statistics of *The National Provisioner*, recognized publication of the meat industry, list a total of 2,238 manufacturing meat packers, 954 sausage manufacturers and 65 exclusive meat canners in the U. S., in addition to numerous other closely related plants which engage in the production of products ranging from margarine, dog food and shortening to grease, tallow, glue and gelatin. According to this authoritative source,



The packer has become a packager  
and now sells 23 billion pounds a year,  
taking 24% of the average food dollar

PHOTO COURTESY DEWEY & ALMY.



**SNUG-FITTING FILM WRAPS** and bags—protective and colorfully branded—represent today's most active trend in the meat industry. Few of these items would have been found packaged at all 10 years ago.

meat production amounts to one-third of the total volume of all food products, with meat forming the main course for two or more meals each day for the average American.

In the absence of figures, one can only imagine the quantities of paperboard, cellophane, plastic films and other packaging materials required to package the more than 500 million pounds of frankfurters produced by Federally inspected plants during 1952 and the number of cans necessary to pack approximately 1,700,000,000 lbs. of canned meat and meat products (exclusive of canned horse

meat) produced during the same period. Although total sales of the meat industry in 1952 reached \$11.3 billion, net earnings approximated only \$63 million, or less than six-tenths of a cent per dollar of sales. Due to its traditionally narrow profit margins, the industry is particularly interested in improved packaging and other merchandising developments which will help to improve its earnings position.

At some 400,000 retail outlets, the industry's finished products pass into the hands of the consumer. Most of these units are identified as combination grocery-meat stores; the number

of stores handling meat only is declining steadily. In the Chicago area the number of straight "meat markets" dropped about 20% in 1952 as the trend to supermarket operations continued. The steady growth of self-service meat operations is indicated by the fact that the number of complete self-service meat departments burgeoned from only 10 stores in 1944 to approximately 7,000 in 1953.

There is scarcely a type of consumer-package material known to the food field which is not used to some extent by the meat-packing industry. Here we find a vast array of packaging





**HAND OPERATIONS** are inevitable in much meat packaging because of weight and size variations encountered. Here sliced bacon is divided into package portions and check weighed at Armour & Co.

materials and types, ranging from tin and glass to casings of cellulose, saran and other materials; folding cartons, aluminum foil, vegetable parchment, waxed paper and other types of functional papers having greaseproofness and other desirable properties, and a whole range of transparent and semi-transparent films, including the big

cellophane family, Pliofilm, polyethylene, Cryovac, saran and the many laminated and coated materials.

#### Canned meats

The metal can continues to carry a tremendous volume of prepared meat products to the consumer. Acceptance of canned-meat products has increased

tremendously in the last 15 years, due to processing and packaging improvements. Approximately 70 types of canned-meat items are now on the market, with some 75 companies, including all the major meat packers, having their own canned-meat line. In 1952 canned-meat volume soared to a total of 1,350,300,000 lbs.—almost a fourfold increase over 15 years ago. The rise in per capita consumption is indicated by the fact that 9.23 lbs. were consumed in 1952, as against only 3½ lbs. in 1939.

Conveniently and safely stored in the home for long periods without taking up space in the refrigerator or freezer, canned meats fit the accelerated tempo of modern living. They fit nicely into packer merchandising activities because they permit the producer to offer an integrated line which carries the trademark right to the pantry shelf. The Armour & Co. line of Pantry-Shelf canned and glass-packed meat items, the broadest currently offered by any U. S. meat packer, includes more than 25 items.

Many packers have been modernizing their canned-meat labels to in-

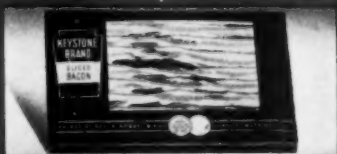
## Six ways to package sliced bacon



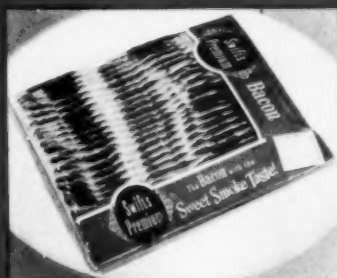
**Vacuunized film wrap**



**Overwrap on three-sided, interlocked, printed board**



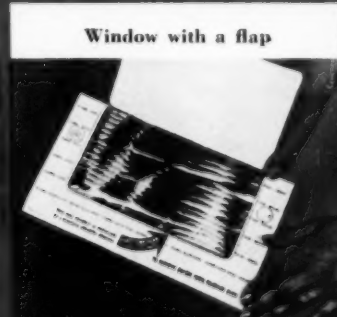
**Window carton**



**Film overwrap on tray with two-sided, interlocking flaps**



**Aluminum foil wrap**



**Window with a flap**

crease eye and quality appeal, to facilitate selection and to provide information of value to the housewife in preparation and serving. The older concept of standard labels has given way to the use of full-color vignettes of the meat product as it appears when ready to serve, tied in closely with the brand name and specific product name. Detailed serving suggestions and related information are customarily confined to the back side of the label to insure maximum display effectiveness for the front panel.

Armour has recently taken an interesting step toward increased consumer convenience in the purchasing of canned hams through the introduction of a sturdy paperboard band with a carrying handle. These bands (see *MODERN PACKAGING*, December, 1953, p. 124), which may be decorated with an appropriate seasonal motif, are wrapped around the flat surface of the can and sealed at the base by means of cohesive cement that sticks only to itself. Attached firmly to the band is a re-usable, jump-bottle-sized can opener.

### Sliced bacon

Unlike canned meats, which are specialty products requiring operations and facilities possessed by a relatively small number of meat plants, sliced bacon ranks as a basic, branded product put out by practically all packers who are set up to slaughter hogs and process pork. A 240-lb. hog, which dresses out to a wholesale weight of around 180 lbs., yields approximately 27 lbs. of bacon.

The popularity of this product on U. S. dining tables (and, incidentally, its magnitude as a market for packaging materials) may be judged by the fact that in 1952, sliced bacon produced under Federal inspection topped 800 million pounds. Yet, when sliced bacon was first placed on the market in 1915 there were many who felt it had no market future. It was not long before packers came to realize that the most efficient and effective method of handling this product was to wrap or package it directly in the plant, as it came off the slicing machine, in such a manner that brand name would be maintained all the way to the ultimate consumer.

In the early days of sliced-bacon packaging, "blind" cartons and opaque wraps were the prevailing practice. Later, with the introduction of cellophane and other suitable transparent

films, came a transition to bacon packages which afforded visual inspection of the slices prior to purchase. More recently, sliced-bacon packages have shown a strong trend toward appetite-appeal product vignettes used in combination with a window area. Concurrently, some progress has been made toward mechanization of bacon-packaging operations, although the bulk of this product still has to be wrapped or packaged manually.

Such features as electric-eye registration, automatic cut-off and provision for built-in heat sealing permit the use of continuous rolls of transparent printed wrapping materials for faster production. It is still customary, however, for the bacon to be placed manually on the backing boards and check-weighed before being transferred to the wrapping equipment. Many of the wraps themselves are still applied manually and closure effected by means of hand sealing irons.

The heavy new demands imposed upon sliced-bacon packages by self-service selling—which also apply in large degree to other meat products sold in this manner—are graphically portrayed in a new marketing-survey film made by a large packaging supplier,<sup>3</sup> which has been shown to various meat-industry sales groups. Utilizing the concealed-camera technique, this film consists of close-ups of self-service bacon purchases being made at representative retail food stores in various sections of the country. The most striking point driven home in the film is the almost-unbelievable amount of scrutiny and handling many shoppers give the packages before making a final selection—apparently in quest of "the perfect package" with just the desired proportion of lean slices. Studies of the film reveal that the average shopper handled 4.3 packages before making a decision.

Types of sliced-bacon packages most widely used at present vary from "picture-window" folding cartons, in which some degree of visibility is sacrificed in the interest of greater sturdiness and light protection for the product, to packages which consist essentially of a transparent overwrap used in conjunction with a greaseproof backing board, which may be printed on the reverse side with sell and use copy. There are many patented constructions with special advantages for bacon, including (1) specially designed

<sup>3</sup> Marathon Corp., Menasha, Wis.

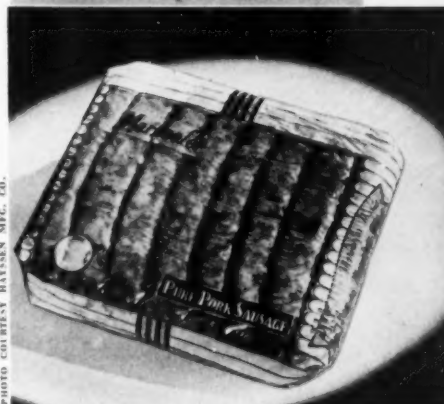


PHOTO COURTESY BAYSEK MFG. CO.

SAUSAGES no longer are ambiguous products of back-alley slaughter houses; through packaging they carry the prestige of top brand names. For hardy types, Swift uses a film bag stapled to price card perforated for hanging. Marhoefer uses popular greaseproof tray overwrapped with printed film.

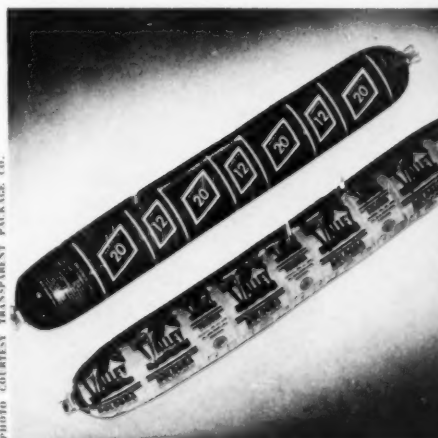


PHOTO COURTESY TRANSPARENT PACKAGE CO.

CASING CALIBRATED for meat chunks and slices is new convenience for retailer and consumer.



TRAYS AND BANDS, both with printed film overwraps, merchandise the Marhoefer name. Locking-type greaseproof band has been inverted to show how sell and use copy appear on bottom of package.



baseboards with fold-over ends which lock in place, masking uneven slice ends; (2) a combination wrap and carton which lends itself to rapid handling and gives a lightproof package although providing visibility of the product, in many cases, through a hinged flap covering the transparent window;<sup>4</sup> (3) a prefabricated cellophane envelope into which single slices are inserted on a greaseproof backing board in high-speed manual operations and (4) the flexible vacuum package, which Armour pioneered<sup>5</sup> and still uses for a portion of its bacon pack. Convenient tear tapes are beginning to be used on cellophane packages for bacon, including the prefabricated envelopes.

One of the few to buck the consumer demand—real or fancied—for visibility of sliced bacon is the Field Packing Co., Owensboro, Ky., which reports enthusiastic reception for an opaque printed foil package for its Chuck Wagon ranch-style sliced bacon. The company says the foil reduces drying out and keeps the bacon sweeter and milder. Customers seem to appreciate this point and also the convenience of rewapping unused portions in the protective foil.

#### Sausage types

As a group, sausage and other types of prepared-meat products have probably been the object of more packaging development than any other class of packer items in recent years. Trade sources estimate that there are now more than 190 varieties of sausage made in this country; one pound of each eight pounds of meat eaten by Americans is in the form of a sausage. Frankfurters, most popular of all sausage products, represent about a third of the total.

Trademark identity has always been a problem with sausage. This was particularly true prior to the introduction, in 1926, of cellulose casings which could be printed. Unfortunately, identity was lost again when the sausage was sliced by the butcher for retail sale. In the period since World War II, this problem has been largely overcome through the packer's practice of pre-slicing sausage and other types of luncheon meats and placing the slices in convenient, protective packages which also bear the packer's brand name and other in-

<sup>4</sup> See "Window with a Shade," MODERN PACKAGING, July, 1951, p. 66.

<sup>5</sup> See "Flexible Vacuum Package," MODERN PACKAGING, June, 1947, p. 100.

**How  
packaging  
has upgraded  
the ubiquitous  
hot dog**



**PREMIUM PROMOTIONS**, including baseball trading cards and parts of jig-saw puzzles to be cut from base of greaseproof lock-tab tray, are being used by Hunter to intrigue strong juvenile influence of hot-dog purchases. Note also colorful printing of tray sides, simulating weiners from all angles, and printed overwrap.



PHOTO COURTESY MARATHON CORP.

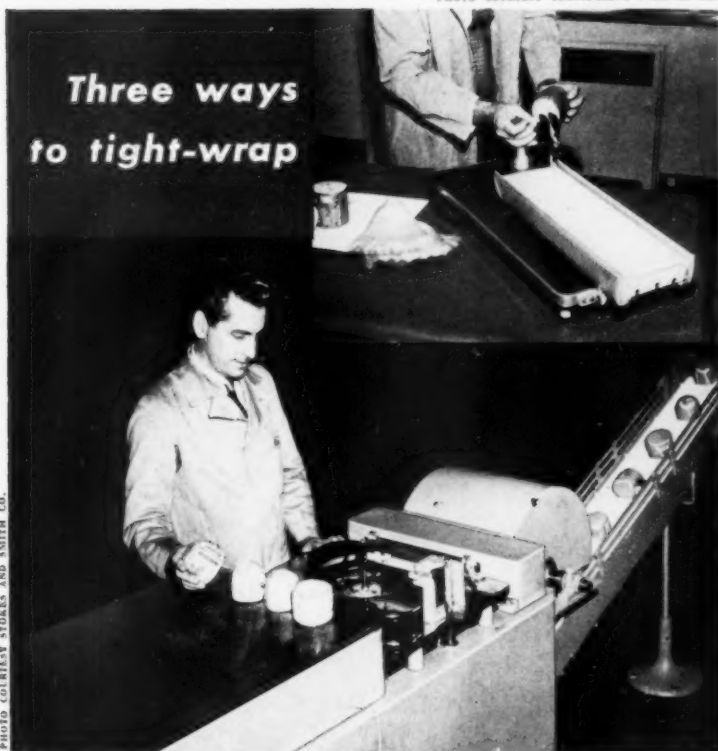
**KARTRIDG-PAK** continuous heat-sealed bands, applied automatically at high speeds, marked a pioneering advance in brand identification.



PHOTO COURTESY TRANSPARENT PACKAGE CO.

## Three ways to tight-wrap

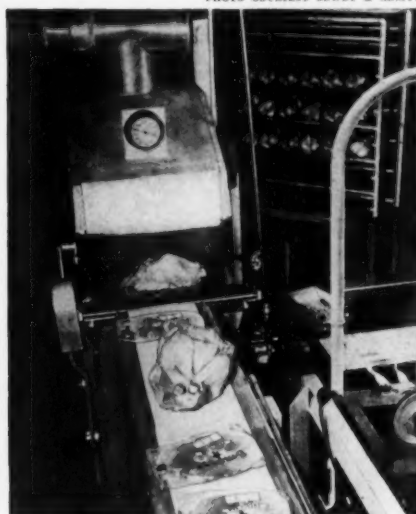
PHOTO COURTESY STORES AND SMITH CO.



**STRETCH-WRAP MACHINE** eliminates much of tedious hand wrapping of sausage chunks in Pliofilm, making operation almost fully automatic.

**WITH ONE MAN** portable set-up, chunk piece is placed on pedestal, covered with Pliofilm "cap" which is "milked" downward to remove air, open end twisted into tight pigtail, pigtail seared off on sealer's hot blade and piece slid down inclined hot-plate to complete shrinking and provide a strong, tight, durable heat seal.

PHOTO COURTESY DEWEY & ALMY.



**HOT WATER IMMERSION** shrinks Cryovac to skin-tight fit of ham slice or turkey.

formation useful to the housewife in making her selection.

When the sausage is sold in the form of unsliced chunks or lengths, a suitable type of transparent film is used as a skin-tight outer wrapper which seals the cut ends and permits the printed casing beneath to be seen clearly. All these packaging developments have enabled the packer to intensify his merchandising efforts on many types of sausage and prepared-meat items.

It is in this field that the flexible vacuum package has found its widest adoption. It is now employed by a large number of meat packers throughout the nation for sliced luncheon meats. By greatly extending the shelf life of these products, the vacuum package enables a packer to broaden his distribution area and compete with local suppliers on branded products of this type. The most popular size contains half a pound of meat, with slices arranged either in a solid stack or shingled like bacon.

Sliced luncheon meats are particularly susceptible to discoloration and deterioration when exposed to light. To meet this situation there is a grow-

ing trend toward arranging the slices in stacks and topping them with a full-size, full-color, greaseproof paper label which is a realistic reproduction of a slice of the meat itself, with a smaller name-and-price label superimposed in the design.<sup>6</sup>

In addition to "straight" packs containing a single variety of sausage or meat loaf, some packers have introduced interesting variety packs combining several types of products. In bygone days, any shopper asking the butcher to give her "three slices of this and three slices of that" found it rather a time-consuming and involved operation.

Laminations of Pliofilm and cellophane are the most commonly used type of material for the flexible vacuum packages. Saran has also proved to be an excellent material for such packages, which must be capable of holding a vacuum effectively, receptive to printing and able to be used directly in contact with the product without imparting taste or odor.

The extent to which other materials and combinations of materials such as

polyethylene, cellophane coated with polyethylene, etc., may eventually be used for this type of package poses an interesting question. Film producers and converters realize that only through unceasing research and development can they expect to stay abreast of this fast-moving field. And the same thing applies to equipment. Modern, rotary-type vacuum packing machines can evacuate and seal up to 40 packages per minute, as against 18 or 20 per minute for some of the earlier-type machines, which operated on an intermittent cycle and required a larger amount of hand labor. Additional equipment producers are now becoming active in this field and important developments may result.

An interesting and unusual type of semi-rigid vacuum pack brought out

### The technical viewpoint

For a timely review of the technical aspects of meat-packaging methods and materials, see "Meat-Packaging Criteria," Technical Section, p. 131, this issue.

<sup>6</sup> See "Facsimile Label for Meats," MODERN PACKAGING, March, 1952, p. 194.

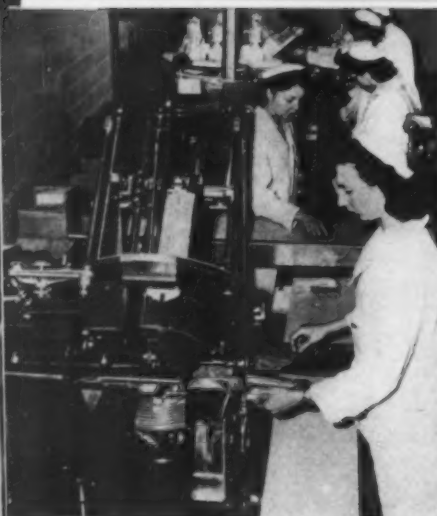


PHOTO COURTESY PLEK-SAC DIV., STANDARD PACKAGING.

**VACUUM PACKAGING** of sliced luncheon meats, in plant of a Southern meat processor, includes latest slicing and packaging machine (foreground) and rotary-type vacuumizing sealer (rear) that will handle 40 packages a minute. The flexible vacuum package has found its largest adoption in this field.

by Oscar Mayer & Co.<sup>7</sup> consists of a metal end or base used in conjunction with a snugly fitting wrap of clear saran film which is anchored to the base by means of a crimping operation, utilizing a strip of flexible plastic material as a gasket. This type of package is made on standard can-crimping equipment, the closure being effected in an evacuated chamber. A printed label is applied to the top surface of the wrapper.

<sup>7</sup> See "Semi-Rigid Vacuum Pack," *MODERN PACKAGING*, Feb., 1952, p. 106.

Many packers—particularly those whose distribution area is limited—merchandise sliced luncheon meats in non-vacuumized flexible transparent packages. Since these packages have a relatively brief shelf life, stocks must be watched carefully by retailers and packer representatives.

Pliofilm, Cryovac and cellophane are among the materials most commonly used for tight wrapping or shrink wrapping of chunks or cut lengths of sausage products. Although the printed casing in which the product is stuffed affords excellent protection on the sides of the item and also identifies the product, the meat would dry out and lose its sales appeal quickly unless the cut ends were protected.

### The omnipresent hot dog

No review of meat packaging would be complete without mention of the frankfurt, or "hot dog," which tops all other types of sausage products in volume and ranks as one of the industry's most hotly competitive items.

Not so many years ago, a favorite situation portrayed by cartoonists showed a hungry dog bolting from a butcher shop with a string of wieners in tow. Unfortunately, such cartoons accurately epitomized the status of much packer packaging at that time. In contrast, many of today's younger homemakers probably never saw a string of linked frankfurts; they are accustomed to buying them neatly packaged and brand identified.

Oscar Mayer & Co. made an important contribution to frankfurt merchandising about 10 years ago with

the introduction of its Kartridg-Pak continuous banding method, which provided the first positive type of brand identification for wieners, breakfast sausage and other varieties of link-sausage products. This patented type of banding, now available to other packers, employs a specially developed machine to bind the links closely together side by side for convenient handling and identification.

The Oscar Mayer organization—one of the real packaging pacemakers of the meat industry—was also responsible for the development of the Sack-o'-Sauce container for canned frankfurts, in which one of the frankfurts is replaced by a Pliofilm bag of barbecue sauce for easy heating and serving, and for the highly protective saran type of casing for consumer-size units of liver sausage, now widely used throughout the industry.

For self-service selling of frankfurts, as well as for link-style pork sausage, a typical package now consists of an overwrap of cellophane, Pliofilm or other transparent material, used in conjunction with a supporting paper-board stiffener, U-board or tray. Although an increasing volume of these packages is being handled on semi-automatic wrapping equipment, manual operations still prevail in many plants and opportunities for increased mechanization are large. Through the use of stainless steel and other corrosion-resistant materials, equipment manufacturers are gradually overcoming the problem of high humidity encountered in the typical meat-plant installation.

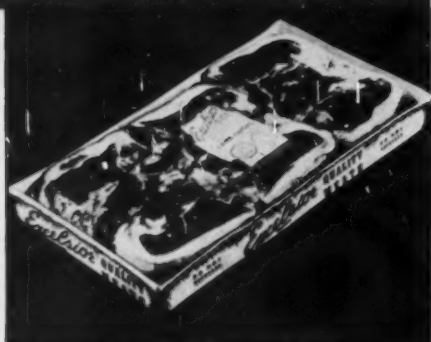
Over and above their protective function, many frankfurt packages do an excellent promotional job. Mickelberry's Food Products, Chicago, for example, printed a series of humorous farm animal cut-outs, with high juvenile appeal, directly on the baseboards used for its 1-lb. frankfurt pack with cellophane overwrap. Hunter Packing Co., East St. Louis, Ill., whose pound frankfurt package consists of an overwrapped tray, adopted a printed design for the sides and ends of the tray simulating the appearance of the 10 wieners in the package and devoted the entire bottom surface of the tray to full-color autographed trading card cut-outs of two members of the St. Louis Cardinals baseball team.

Wieners, pork-sausage links and various other types of small sausage items also frequently go to market in (This article continued on page 192)

## Two types of frozen-meat packaging



**APPETITE APPEAL** of well-printed folding carton, showing ready-to-serve dish, has helped promote big packagers' names.



**SIMPLE** cellophane overwrap of a printed tray has proved effective for frozen cuts, like steaks and chops, which the customer wants to scrutinize before purchasing.

PHOTO COURTESY BAYSEEN MFG. CO.

# Self-selling hardware

With visibility packaging and "do-it-yourself" display

Yale & Towne makes night latches an impulse item

The latest show-it-to-sell-it merchandiser developed for Yale night latches by Yale Lock Hardware Div. of the Yale & Towne Mfg. Co. illustrates what a little imagination used in packaging can do to put what might otherwise be a routine hardware item on the counter where it actually becomes an impulse item. This is one more example of Yale & Towne's progressive packaging program\* that indicates the continuing trend in the hardware industry to packaging designed for self selection.

Each night latch is fully visible in a folding box with an acetate window. Three of these individually packaged Yale streamlined night latches are placed in a new shipping carton which turns into a counter display.

Designed to appeal to the increasing number of "do-it-yourself" customers, the night-latch units include complete instructions describing the simple three-step procedure for their installation.

The colorful display is decorated in eye-catching red, white and blue. Copy states simply the brand and product designation with the sell copy, "Install It Yourself—Today!" A point is made that there are "clear, simple instructions with each package." A close-up illustration is accompanied by a prominent price patch stating: "Only \$4.25."

Special features of the product are listed at the left of the riser piece: "Assured security; may be keyed to other doors for single key convenience; extra long bolt deadlocks against jimmying; streamlined rustless case."

The top of the shipping carton hinges under the body to form an eased 20-deg. angle toward the shopper. The riser containing the sales message is a protective flap which fits under the shipping carton when closed. The entire unit is shipped in

a covering throw-away outer sleeve.

Compactly designed to take a minimum of counter space, the display measures only 8 by 8 in.

In each of the individual cartons the main body of the night latch rests on a platform and is held in place by its three screws which are secured by crossed slot cuts in the under portion of the platform. The under portion is made of 200-lb.-test, B-flute corrugated board. The lock cylinder is held firmly in place by carefully sized die cuts.

The display carton and the individual boxes are made of 0.026 patent-coated kraft-back stock. The acetate window is 0.075 in. in thickness. The packer sleeve used for shipping is made of 0.025 bending chipboard.

CREDITS: Carton artwork, Charles Taylor, Riverside, Conn. Design development for display, Herbert F. Kleinhans Associates, 122 E. 42 St., New York. Cartons, Folding Cartons, Inc., of New Jersey, Div. Federal Paper Board Co., 20 River Rd., Bogota, N. J.

ANGLED DISPLAY-SHIPPING CARTON holds three individually packaged night latches. Acetate windows show off streamlined product design.



\* See "Décor for Doorknobs," MODERN PACKAGING, Aug., 1953, p. 86; also "For Yale & Towne—a Modern Merchandising Package," MODERN PACKAGING, June, 1946, p. 103.



# Design

## Self-dispensing nozzle on permanent-wave tube



Packaging of Forever Conditioning Cream Neutralizer, a new product by Bonat & Bonat, Inc., provides greater convenience for the beauty-shop operator in giving permanent waves. The product, which is sold only to the trade, is packaged in a collapsible metal tube fitted with a polyethylene plastic dispenser nozzle that enables controlled dispensing of the cream neutralizer. The molded polyethylene tips are supplied to the tube manufacturer who applies them to the metal tubes by a special machine designed and built for this purpose. The operator simply applies the cream to the customer's hair directly from the tube without unnecessary muss or fuss and without measuring or mixing in a separate receptacle.

CREDITS: Tubes, The Sheffield Tube Corp., New London, Conn. Cartons, Acme Folding Box Co., Inc., New York.

## Five-in-one crackers



Five individual packs of different kinds of crackers in a single 1-lb. package introduced by the Wortz Biscuit Co. are reportedly being enthusiastically received in Southwestern test markets. Designed primarily for every-day use to provide a variety of crackers for small families, the assortment is also excellent for parties. Extensive research and planning was done before the final assortment was selected. A survey of housewives' cracker-buying habits resulted in a decision to place 4 oz. each of saltines, graham and round salad crackers and only 2 oz. each of cheese and oyster crackers in the assortment. This gives twice as much of the most popular varieties, with still enough of the others for a serving. An insert in each package points out various uses for the different crackers and explains that the assortment was packaged for the housewife's convenience. The name, "Family-Pak," was selected to differentiate the package from a party pack. The package carries the Wortz triangular family design and full-color illustrations of the five crackers.

CREDIT: Package, Marathon Corp., Menasha, Wis.

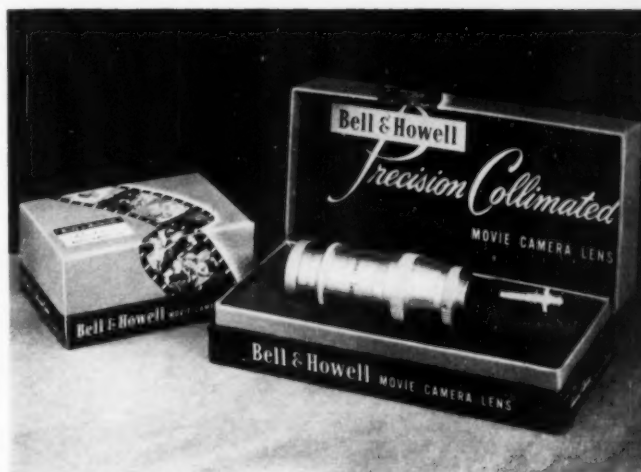


# Histories

## Photographic lenses in a velvet-lined gift box

An elegant jewel-like setting has been provided by Bell & Howell Co. for the individual packaging of its Precision Collimated Movie Camera Lens. The lens and its matching viewfinder objective rest in an inner velvet-covered tray in this two-piece, hinged box, which not only provides protection for the product during shipment and merchandising, but also serves as a protective case for permanent use by the purchaser. In addition, this new box makes an attractive counter display piece for the retailer. Since photographic equipment is becoming increasingly popular for gift giving, its effective display is an important factor in bringing the products to the attention of the shopper. The identifying Bell & Howell picture-film strip runs across the top, front and back of the box.

CREDIT: Box, W. C. Ritchie & Co., Chicago.



## Purse-size dietetic sweetener

A new convenience for using a concentrated liquid sweetener is offered by the packaging of Sweeta, presented by E. R. Squibb & Sons in a purse-size polyethylene squeeze bottle for the dietetic customer. The 24-cc. plastic bottle, reported to hold the equivalent in sweetness of 432 level teaspoonfuls of sugar, is designed with a ball-in-ball-principle dispensing device, representing considerable study on the part of the company to adapt this method of dispensing to assure easy drop-by-drop release. Two drops are equal to the sweetness of a teaspoonful of sugar. The familiar Squibb label in buff and brown is hot stamped and the cap is brown urea. The handy new purse-size packages are being merchandised in attractive paperboard display cartons containing a dozen each. Squibb reports sales far above forecasts.

CREDITS: Bottles and dispensing device, Plax Corp., Hartford, Conn. Silk-screen bottle labeling, Art Marking Specialists, Inc., North Bergen, N. J.; Poly Perm Printing, Inc., New York, and Anigraphic Process, Inc., Cliffside, N. J. Display carton, E. J. Trum, Inc., Brooklyn.





**NEW METHOD** in which product forms the mold produces skin-tight fit of clear butyrate sheet over steel tape rule. From left: product; vacuum-formed plastic sheath; card in which it is enclosed; plastic sheath viewed top side and the completed package displaying sales copy and use instructions.



**ASSEMBLY** of components is aided by vacuum-formed dome, which here encloses house number and two screws to mount it. Plastic is stapled to card.

## Vacuum formed plastics

New techniques in their production and use are opening up vast new low-cost fields for packaging

**VARIETY IS NO PROBLEM.** Transparent domes for a family of 14 hardware items are formed in a single sheet. Individual molds are varied to control number of domes needed for current production items.

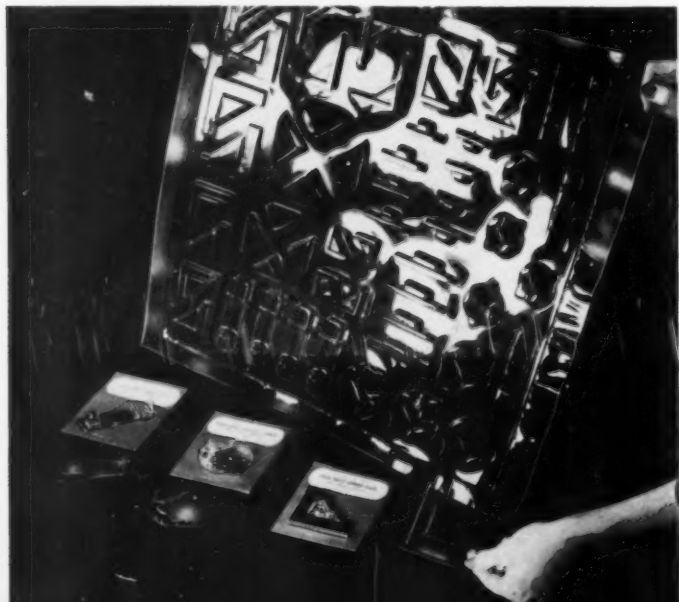


PHOTO: COURTESY MERIT DISPLAYS CO.

Vacuum forming of plastic sheet materials presents the packager with important new opportunities in the field of transparent, contour-shaped throw-away packages. Vacuum forming is also a significant new medium in the field of three-dimensional, low-cost displays and point-of-purchase replicas, emblems and similar accessories.

Because of the wide interest that is being aroused by this relatively new and simple process, MODERN PACKAGING has asked forming-equipment makers, plastic-materials suppliers, fabricators and end users to report on the latest developments in regard to vacuum forming, which, basically, employs low-cost machinery, radiation and atmospheric pressure to form plastic sheets into practically any contour desired.

Vacuum-formed plastics are definitely aimed at a wide area in packaging, including the field embraced by low-cost self-service merchandising as well as the packaging of class or specialty items. Vacuum-formed plastics thus take on strong interest, for there has long been an unfilled gap in existence between the low-cost film wrap or bag and the more costly formed rigid or semi-rigid plastic container. With certain notable exceptions, the semi-rigid plastic container is usually thought of mainly in connection with higher-priced or specialty merchandise. Generally, too, it is designed as a long-use or re-use container, rather than a throw-away. Vacuum forming, however, seems to be equally well suited for the production of either functional or throw-away containers.

**MODERN PACKAGING**



**NO LOST PARTS.** Clear acetate plastic dome, stapled over Sears Roebuck window hardware, keeps all of the product units intact. The form-fitting contour of the dome also serves to keep the product correctly positioned on the card.



**POWDERED PRODUCTS** are filled directly into a contour-shaped dome of plastic which is then mounted on a card. Flexibility of the thin sheet plastic makes for easy dispensing when the dome is punctured.

The round-up of recent examples that follows shows that there are many new avenues of approach to be explored in vacuum forming—some of them undoubtedly pointing the way to new heights of merchandising success for a host of different products.

#### Vacuum-formed containers

Still the outstanding example of the vacuum-formed all-plastic package is the transparent spheroid container adopted by the U. S. Rubber Co. for its new 1953 line of top-quality golf balls.<sup>1</sup> The package consists of connected hemispheres pre-formed from a sheet of clear, 0.0075-in.-gauge cellulose acetate. After the golf balls have been encased between two shells (strips of three are packaged), the flanged edges of the shells are sealed electronically. Not only was this package a significant step forward from the standpoint of the forming and sealing methods used, but it also served to focus serious attention on the fact that the quality look of a semi-rigid transparent package could be achieved with a thin-walled, economical material.

U. S. Rubber has demonstrated that pioneering with the new technique can readily pay worthwhile dividends in terms of process advantages. Its success also emphasizes the fact that entirely new dimensions of design freedom are waiting exploitation on the part of alert and ingenious packagers. The new package has been extremely well received. Recently one small handicap—difficult opening—has been neatly overcome

by incorporating a colored cellulose acetate tear strip, which is an improvement on the opening-notch first used. The colored tear strips add a display touch and also color code the different types of golf balls in the line.

The golf-ball package is a good example of a vacuum-formed container supplied by an outside fabricator who specializes in the process. Most vacuum forming today, in fact, comes from fabricators.

However, a new and outstanding example of the revolutionary potentials in in-plant vacuum forming by the packager is the sheathed jacket now employed by Master Rule Mfg. Co., Middletown, N.Y., for its line of roll-out steel tape measuring rules and replacement blades. Master Rule uses the product itself as a mold, demonstrating a brand new application of the imbedment principle. The objective of the new package is to provide an improved and more controllable method of encasing the retail product in a skin-tight plastic on a rack or counter bin. Over-all, the package is designed so that each rule is attractively displayed, protected, inspectable and accompanied by total sales message—from product features to price to instructions.

Master Rule has produced and improved the package from the standpoints of durability and sales appeal; reduced the cost of the package by about one-fourth (in comparison with the previous loose-fitting plastic cover formed over molds rather than the product itself); eliminated all die cost and, most importantly, solved major problems of inventory and process control.

Because this is one of the most significant examples of vacuum-formed packaging yet to come to light, the technical facts are well worth examination in some detail.

The plastic is cellulose acetate butyrate of 10 mils thickness, cut from a 100-lb. roll into sheets about 18 by 22 in. Each sheet will encase a square pattern of 25 steel tape rules placed within a vacuum-forming frame measuring 17 by 22 in. The machine employed takes small space and consists essentially of an electrically heated head, held at 700 deg. F., which is rolled on ways over the loaded vacuum-forming frame and plastic sheet at a distance of 6 in. above it. A heating time of 25 sec. is provided before the operator throws the hand lever at the front of the machine and permits the vacuum to suck the heated plastic down over the 25 products. The total cycle will not exceed 1 min. for one drawing operation after all production methods and procedures are solved. Presently the over-all cycle is down to 1½ min., while the process is being worked into Master's production sequence.

Thus, 1,500 steel tape rules per hour may easily be encased, even with the one small machine, and it is calculated that the present set-up is capable of handling 1,000 doz. rules a day in a single 8-hr. shift.

Master Rule has already found that ½ of one cent for the plastic material, plus ¼ of a cent for labor and current, plus one cent for the die-cut card with cohesive backing, will cover the cost, so that the total package can be produced for 2.3 cents—25%

<sup>1</sup> See "Golf Balls in Contoured Plastic," MODERN PACKAGING, JUNE, 1953, p. 120.





**DUAL FUNCTION** is performed by this vacuum-formed acetate tray for a chemistry set that rests inside a set-up box. Tray holds various parts of set, also provides wells for mixing chemicals. Tray is formed by simple labor-saving equipment in Gilbert plant, using aluminum molds.

less than the cost of the predecessor package. More significant, however, is the fact that the packager does not have to contend with a variety of package shapes and provide dies with the right assortment of mold shapes. By the prior method of vacuum forming loose-fitting domes over metal molds, there were, according to Master Rule, always too many of one

shape and not enough of another in inventory. The dies used for pre-forming cost approximately \$200 each and had to be changed or replaced in accordance with shifts in the business volume of steel tape rules of different sizes and shapes. This die cost is now completely eliminated, because the rule itself is the mold. Further, there is no problem of delivery or de-

**COMBINATION** of vacuum forming and fabrication. Vacuum-formed dome holds flower. Dome is formed in acetate sheet before fabrication of sheet into cover of telescope box for handkerchiefs.

**LATEST TOUCH** in one of the pioneer mass-produced vacuum-formed packages is the addition of a colored tear strip for easier opening of three-in-a-strip U. S. Rubber golf balls. Strip adds a display touch and also color codes types of balls.



lay, since the vacuum-forming machine may be readied for operation in a matter of minutes. Also, the loose-fitting dome formed over a metal mold had to be 15 mils in thickness, whereas the tight-fitting sheath need be only 10 mils in thickness.

Definitely, no criticism of the vacuum-formed pre-fabricated dome previously used should be inferred. Actually sales jumped 65% as a result of original adoption of the dome in connection with modern self-service display techniques. The principal reason for conversion to an in-plant operation was the fact that this particular product lent itself well to being used as a mold and obviously the production of steel tapes could not be transported to the fabricator for packaging. By the same token, there will always be many applications where the product cannot be the mold and where fabricator supply will be desirable.

Most dramatic is the ability of the new method to sheathe almost any shape—even including a coiled replacement blade. The resulting job even matches into the engraving of the product and bulges inward into all of its crevices and openings. Yet one quick rip removes the plastic as a unit, however tight the fit.

Perhaps the nearest thing to this new technique is plastic stripcoating by the dipping method, although the two are not really comparable.

The vacuum-drawing plate consists of a wooden base with routed air channels, in a radiating pattern, topped with ½-in. hardware cloth, on which rests a tempered Masonite plate (scored to direct the placement of products and give guide lines for later shearing when the packaged rules are cut apart.) The vacuum ports through the Masonite plate are drilled so that they open under the product. This important new technique facilitates the sucking of the plastic sheet tightly into contact with every surface of the product without entrapment and provides a good, flat flange which is perfect for assembly into the folding display card.

Control of temperature in the head is by means of an on-off unit consisting of a mercury switch actuated by a small motor. Control is effected by adjustment of the percentage of on and off time. Temperature indication is by a sector-type thermometer, the thermocouple of which is sewed into the fabric on the underside of the



heating head. Heating-cycle control is actuated by a microswitch with a roller attached to its leaf and thrown by a cam on the side of the heating head as it is drawn forward to start a heating cycle. The alarm at the termination of the 25-sec. cycle is by bell. It is at this moment that the operator moves the vacuum-valve lever. Drawing and cooling are almost instantaneous.

The formed sheet and imbedded rules are then lifted out as a unit for cutting and subsequent carding. The contour fit of the plastic around the product is so tight that the rules are actually locked into their individual plastic jackets for handling, although they can readily be forced out the open side. The skin-tight fit thus immobilizes the product and reduces exposure to air to a minimum—by-product features that are not essential in packaging steel tapes, but which might be important for certain products needing protection from shock or corrosion.

#### Carded products

The card-and-plastic-dome package, as used by Master Rule, has been one of the major fields for vacuum forming.<sup>2</sup> Currently, the hardware field, under the impact of the new self-service trends enlivening this field, is showing strong interest in the plastic-domed card. Sears Roebuck & Co. have adopted a cellulose acetate cover for carded window-sash catches and window lifts. Reflexite has come out with a three-dimensional plastic cover for house numbers. The Brainard Mfg. Co. is "blister" packaging a whole family of hardware parts such as metal angles, hinges and brackets. A variety of shapes for these parts are molded in each single sheet. Inventory problems for varying demands are solved in subsequent runs by altering the individual molds patterned in each sheet, it is claimed.

A number of closure methods are available for attaching plastic-encased products to cards. The flange techniques peculiar to vacuum forming lend themselves to stapling or to mounting in doubled-over die-cut cards.

The plastic hood is especially useful when enclosing product components such as screws, bolts or unassembled pieces, because it protects them against accidental loss or pilfer-

age. Other advantages include improved display at a cost most self-service products can readily absorb.

#### Trays and holders

The vacuum-formed plastic tray is being used in a variety of ways. See-through cavities can be molded that help inventory the product. In other instances neatness, compactness or novelty in display are the virtues obtained. The Navy, for example, has used a vacuum-formed, transparent, rigid vinyl tray in one of its test kits. The tray's form-fitting cavities not only hold each tool in place, but also immediately inventory the kit.

The A. C. Gilbert Co. is employing vacuum-formed trays inside the conventional set-up boxes that package children's toys, such as chemical and magic sets, having many parts. The forming is done in-plant. The methods and results offer an interesting case example because considerable pioneering was involved.

With vacuum forming, the company visualized a pocketed plastic tray manufactured inexpensively and utilizing low-cost molds. Other advantages could be seen, such as the elimination of tearing, warping and fading experienced with the colored chipboard platforms previously used; the saving of steel used in pins and the time and labor of pinning parts to the tray; elimination of conveyor operators that were needed in other, critically labor-short departments and an attractive new sales feature, always welcome on toy counters.

The size and style of machine, ever a problem to the beginner, were decided upon and while the machine was being built to specifications, a set of metal-sprayed molds was prepared for a puzzle set.

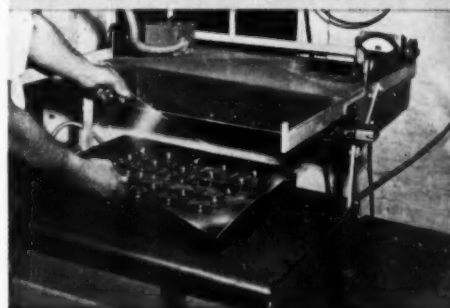
After the machine was delivered the molds were tried and found satisfactory for only limited production. However, they did serve to determine the type of materials to use and the trimming methods. Clear cellulose acetate, 0.010 in. in gauge, was finally settled on, which would give a clear, well-molded tray at the right price.

Trimming raised the question of whether to trim in the mold or on an outside press. Both methods were tried and, for Gilbert's particular type of tray, trimming in the die box on the molds was the method chosen. This is now done using a standard shoe knife in the die box on a set

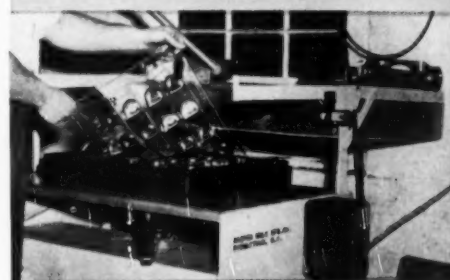
### Three simple steps in new in-plant imbedment method of vacuum forming



25 AT A TIME, Master Rule steel tapes are placed in the frame of an in-plant vacuum-forming machine. Frames are scored for correct positioning.



BUTYRATE SHEET is placed over the coiled tapes. Heater (above) is then pulled into position for 25 seconds and vacuum is drawn around each rule.



LOCKED IN POSITION, the rules are removed from machine with the formed sheet. The units are then die cut and individually mounted on display cards.

<sup>2</sup> See "Transparent Carding," MODERN PACKAGING, March, 1952, p. 200.



**RAISED LETTERING**, vivid colors and molded-in frames for inserts are all vacuum formed in one piece from translucent butyrate plastic sheet. This illuminated display for serve-yourself refrigerated ice-cream cabinet is light weight, durable, low in cost. Flavor strips may be changed.

## Three dimensional displays are readily vacuum-formed

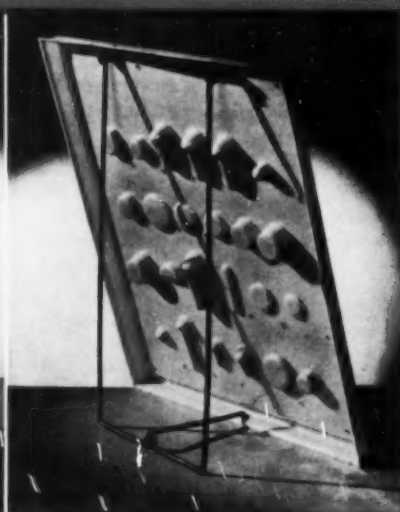
of three molds. Production rate for one operator is approximately 1,500 trays per day.

These trays are 18 in. long by 10 in. wide by 1 in. high. The vacuum former employed is a two-sided machine, which turns out approximately 3,000 trays a day with two operators. Yearly production of the various types and sizes of trays is about 300,000.

The metal-sprayed molds first used did not hold up with the trimming methods and so the development of low-cost, solid cast-aluminum production molds was started. These are now used extensively and are made by first producing a male wood pattern. Over this is made a female white-metal master casting. This master is very smooth, for on this depends the final finish of the molded plastic piece. From the master is made a plaster casting, from which is made the final aluminum mold used by Gilbert.

After the aluminum mold is hardened and cooled, it is drilled with a multitude of vacuum holes and is then ready for production. These final molds have been produced for about \$175 each. Six molds of each type have been made for production.

Gilbert's machine is now set up with automatic controls that take the guesswork out of the operation. The puzzle line, small chemistry set and small magic set have been converted to this type of packaging.



**FRONT AND BACK VIEWS** of a complex display easily handled with low-cost vacuum molds. Shapes and depths of wide variation are accommodated in this rigid vinyl counter display for Chevrolet parts. Vacuum-formed plastic displays offer all the virtues of costlier permanent-type displays.



**3-D REALISM** is provided in this combination paperboard and plastic display. Can is a faithful replica in shape and colors of actual package.

The new packaging has reduced requirements on each production conveyor set-up from 20 operators to four. The released operators were transferred to a department that was short of help.

It would normally be thought that this decrease in labor would reduce the cost of producing the sets; however, this is not the case, because of the added cost of the plastic sheet. The reduced cost of labor just offsets the cost of the material, the company says, but Gilbert has a better product with its "place-for-everything" trays.

A. C. Gilbert is now experimenting with the repackaging of more toys in such trays to improve sales appeal. The trays not only add display attractiveness, but in some instances can be made to serve double duty by providing depressions for mixing chemicals or for performing some similar function that is integral with the use of the product.

### Displays

The advantages of vacuum forming in the display field are outstanding. Facsimile reproductions of various container forms, complete with faithful label and design detail, are used by many different firms. So are three-dimensional reproductions of trademarks, trade figures, seals and emblems of all types.

Thin gauges of plastic sheet formed by vacuum lend themselves

to the creation of illuminated signs. A stock model produced for self-service ice-cream departments, for example, is formed from butyrate sheet in one translucent white piece, with molded-in letters and panels for flavor cards and product photograph. Vacuum-formed faces of different design can be inserted in the display's steel frame, which is designed to permit replacement. Advantages stemming directly from the vacuum-forming process include low cost, raised lettering, molded-in frames for color transparencies or flavor strips and the use of a durable, light-weight plastic material that lends itself to illumination.

Such advantages are reported for a backlighted display used at point of purchase for Sunny Brook Whiskey. This vinyl plastic display is lithographed in eight colors, pre-printed in distortion prior to forming. The cowboy theme of the display is realistically carried out even to faithful contours of the rawhide lacing that encircles the rim of the display.

A display used in promoting Maxwell House Coffee combines vacuum-formed vinyl plastic with a die-cut paperboard mounting card. In this case a realistic three-dimensional replica of the famous Maxwell House container, two times the size of the actual can, is produced.

A display for Kleinert's Swim Caps demonstrates still another use of

vacuum-formed vinyl. In this case a light-weight dummy head is mounted on the display panel of the retail carton. An actual swim cap is "worn" by the head model. Plastic profiles offer a whole host of similar opportunities for realistic display of apparel.

The above-mentioned displays all share advantages that are new and vital in the display field. According to Albert Hailparn, president of the Einson-Freeman Co., Inc., Long Island City display manufacturers with considerable experience in this new technique, the steadily rising demand for vacuum-formed displays stems from mounting competition for space in retail outlets as well as from the trend toward greater use of permanent-type displays. Vacuum-formed plastic displays offer all the virtues of costly permanent displays at a fraction of the cost, it is said. Even a minor advantage is not insignificant: Because of their negligible weight, compared with the heavy poundage of most solid permanent displays, the vacuum displays can be suspended on walls by non-disfiguring miniature picture hooks, vacuum cups, etc. Retailers naturally welcome easy handling features.

### Basic points

The case studies cited above (and they are typical of many others now in existence or developing) justify a (This article continued on page 198)



**LIFELIKE** vinyl display achieved with vacuum that draws piece to maximum 8-in. depth. Distorted flat printing, in color, becomes realistic after forming.



**LIGHT WEIGHT** permits attachment of life-size profile, wearing actual cap, to header piece of otherwise-conventional display carton for bathing caps. 3-D quality lifts display out of ordinary.

PHOTOS COURTESY EINSON-FREEMAN



# PACKAGING



**1** An appropriate optical illusion of depth is achieved by the wavy dark and light blue lines on the corrugated container for Three Dimension Co.'s Show Pak "300" Projector. The design also gives depth to the bottom display panel bearing company name and address. Other products in the firm's line will soon be shipped in similar family packages. Container, Stone Container Corp., Chicago.

**2** Each bottle of Zodiac, a new cologne marketed by Calmac, Inc., promoted as a birthday gift item, is accompanied by a birthday greeting card containing individual horoscopes for all 12 signs of the Zodiac. The gold foil and purple carton is of double-wall construction, which eliminates the need for a corrugated insert. The inner wall is used for a star-studded sky effect tying in with the Zodiac motif. Carton, Robertson Paper Box Co., Inc., Montville, Conn. Labels, Ever-Ready Label Corp., Belleville, N. J. Bottle, Carr-Lowrey Glass Co., Baltimore, Md. Closures, Richford Corp., New York.

**3** Maximum appeal and durability at minimum cost have been achieved by the Chester H. Roth Corp. for its "Fruit of the Loom" children's socks with this 3½-by-12-in. board overwrapped with 11-by-15-in. cellophane sheets. Shingle arrangement of the socks displays the story-book character designs on the cuffs. Package, Clay Printing Co., New York, using Sylvania cellophane.

**4** New Instant Maxwell House Coffee jars in both the 2- and 6-oz. sizes have higher shoulders and a larger white star on the jar cap for price stamping. Mouth of the 6-oz. jar illustrated has been widened for easier access to product. Jars and caps, Anchor Hocking Glass Corp., Lancaster, Ohio. Labels, U. S. Printing & Lithograph Co., Cincinnati.

**5** Multiple-unit sales of Kit's Peanut Butter Caramels in supermarkets are promoted by Fair Play Caramels, Inc., with a printed cellophane bag holding 20 individual packages, each containing three pieces of candy. The single-construction bag, reverse printed, illustrates a boy with a hoop, the center of the hoop bearing the words "60 pieces." Bags, The Dobeckmun Co., Cleveland.





# P A G E A N T

**6** Can Spray, a new garbage-can deodorant and repellent manufactured by Henderize, Inc., was recently selected as the best aerosol package of 1953 by the Chemical Specialties Mfrs. Assn. This spray package was cited for eye appeal, simplicity and clarity of instructions and effectiveness of the design in quickly describing the product and creating impulse sales. Can, Crown Cork & Seal Co., Inc., Crown Can Div., Philadelphia. Spray valve, A. Schrader's Son, Inc., Div. Scovill Mfg. Co., Inc., Brooklyn. Custom packager, Par Industries, Los Angeles.



**7** The Schacht Rubber Mfg. Co. packages its 6-ft. coil of Daisy brand rubber drain hose in a round-bottom transparent polyethylene bag which gives a neat, tight fit and makes an eye-catching display for this hard-to-package product. The bag, printed in red, white, blue and yellow, has descriptive copy listing its various home uses. Bag, Central States Paper & Bag Co., St. Louis, Mo.



**8** Aunt Jemima's portrait takes a less-prominent place on redesigned cake-mix packages featuring a large full-color reproduction of a tempting cake against a soft blue background. Back panels have been redesigned for better legibility of baking instruction. The Quaker Oats Co. has increased the package size for added appeal to economy-minded housewives.



**9** A dispenser package that works similarly to a facial-tissue carton for Dow Corning Corp.'s Silicone-Treated Sight Savers for home, office and factory users now supplements the pocket match-book-style packages of these eyeglass polishing tissues. The carton is made of a lamination of gravure-printed transparent film to unprinted board. "Dispenser-Pak" carton, Shellmar-Betner Flexible Packaging Div., Continental Can Co., New York, using "Colodense" color process on "Shell-Pli" material.

**10** All horizontal cartons of C. F. Mueller Macaroni Co.'s macaroni and spaghetti "long goods" are now packaged in acetate-window cartons permitting a view of the contents. Use of moisture-resistant boxboard for the new packages eliminates the need for the former inner and outer wraps. Cartons, Atlantic Carton Corp., Norwich, Conn., and The Nevins Co., Clifton, N. J.



# Kodak's universal



FIRST to receive the new heat-sealable foil-acetate wrap was medical X-ray film—a critical product from the standpoint of moisture protection. Kodacolor roll film—another product highly sensitive to moisture—was first of Kodak roll films to receive new wrap for both domestic and export distribution.

Eastman Kodak's new universal overwrap for the protection of photographic roll and sheet film marks one more significant step in Kodak packaging progress\* and provides a striking example of the use of laboratory methods for determining package performance.

With the selection of a commercially available, heat-sealable barrier material—a lamination of aluminum foil, acetate and a resinous heat-sealing coating—the new universal pack climaxes a program of many years' research for a package that provides optimum moisture protection whether film is distributed domestically or in the most severe tropical climates.

The project involved the analysis of more than 3,000,000 sample packages—2,000,000 during the wartime packaging program and another million since the war.

The new universal pack, with few exceptions, eliminates the need of special tropical packaging and brings the protective properties of domestic packages up to export or tropical standards. It permits mechanical or semi-automatic packaging without the need of special lines to handle tropical packs, thus effecting production and handling economies.

The deleterious effects of moisture on film emulsions have been recognized since the beginning of photographic-film manufacture. As early as 1912 Eastman began wrapping roll

film in lead foil. Later, lead foil was used in combination with waxed paper to give greater protection in case of pinholes in the foil. During the '20s, with the introduction of aluminum foil, Kodak began using this material in combination with waxed paper.

As more highly sensitive films were developed, packaging problems became more challenging. Intensive packaging studies were undertaken during the mid-'30s to prevent excess water vapor from entering packages

of X-ray film. This research indicated the efficiency of foil laminations, but as far as civilian and non-critical requirements were concerned, the development was retarded by the scarcity of aluminum due to the war. During that period all effort was directed toward the development of a wartime substitute for civilian use (a wax lamination of two glassine papers overcoated with a water-vapor-resistant formulation) and the more vital problems of packaging film supplies for the military to



TOP FLOOR of one of Kodak's film-manufacturing buildings at Kodak Park is devoted to storage testing of film packages. Rooms along "corridor of climates" are specially built to simulate every climate in the world.

\* See "Eastman Kodak Film," *Packaging's Hall of Fame*, MODERN PACKAGING, JUNE, 1952, p. 98; also "New Coordinated Program for 35,000 Kodak Packages," MODERN PACKAGING, OCT., 1945, p. 91.

# pack

## Analysis of 3,000,000 samples proves the efficiency of special foil wrap for both domestic and tropical film

withstand more severe conditions than anything dreamed of up to that time.

Out of the wartime experience and the need for optimum protection in the form of both water-vapor and liquid-water barriers, plus improvement in techniques of heat sealing, came the know-how that has led to the company's present universal pack.

The material evolved is basically a standard water-vapor barrier widely used in military and protective packaging. Eastman reports that the combination has been modified to increase protection, provide easier handling and reduce cost—although the company has not disclosed details of these modifications.

Among the interesting phases of Kodak's film-packaging procedure are the test methods and laboratory facilities for determining package performance.

One of the earliest technical problems was to determine how much

moisture content films should have. Experience has shown that optimum moisture content in photographic film lies within the range of 40 to 60% relative humidity, depending on the type of film, the manufacturing and trade requirements. If film moisture content drops much below the optimum, the film dries out, which causes discharge markings, excessive brittleness and curl. If the film becomes too moist, its photographic sensitivity deteriorates, the surface changes and it may become tacky. When optimum moisture content lies within the 40 to 60% relative-humidity range, it is considered in equilibrium with relative humidity. Measurements of moisture gain or loss in film packages are determined in per cent changes of the weight of a given-sized sample in relation to the relative-humidity range. An accompanying graph illustrates an idealized moisture-equilibrium curve.

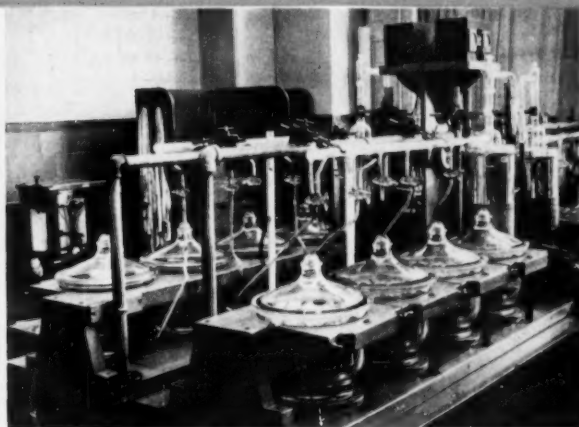
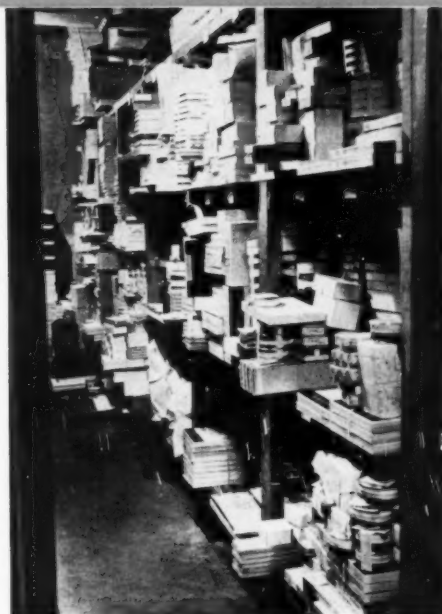
Today, the entire top floor of one of the film-manufacturing buildings at Kodak Park in Rochester is devoted to the storage testing of film packages, where they are measured for gain or loss of moisture.

Among the equipment is what Kodak calls a "corridor of climates," because it opens into rooms especially built to approximate any atmospheric condition in the world, controlled to  $\pm\frac{1}{2}$  deg. F. and  $\pm 1\%$  r.h.

One room at 120 deg. F.—20% r.h. simulates desert conditions; another at 90 deg. F.—90% r.h. simulates tropical conditions at the Isthmus of Panama; 90 deg. F.—20% r.h. for comparison with Panamanian temperature at low relative humidity; 80 deg. F.—60% r.h. for average United States conditions, and 0 deg. F. for winter-time keeping. Other areas approximate conditions of special handling in ordinary trade channels.

As a result of World War II pack-

### corridor of climates



MOISTURE-ANALYSIS equipment, with vacuum apparatus in foreground and analytical balances in background, used in testing film.

TESTING-ROOM interior shows size of vault, and number and variety of packages involved in storage testing of film packages in this case at 80 deg. F. and 60% relative humidity.





GROUP of packages in Kodak's general photographic film line, all of which are being given moisture protection provided by the now commercially available combination of aluminum foil, thin acetate sheet and resin coating, modified to Kodak's own specifications.

film from gaining more than 10% equivalent relative humidity.

3. Storage tests of samples made under normal factory conditions and evaluated in a manner described in the second step above. The only difference is that the samples are subjected, previous to three months' storage at 90 deg. F.—90% r.h., to a specially designed Kodak handling test. This test consists of dropping, vibrating, etc., in a manner that approximates a cross-country trip in a freight car under conditions slightly more severe than average.

If the production-made packages come through the third step successfully, recommendation is made that the package be adopted for commercial distribution and the new packaging material is put into use.

This three-step system eliminates unsuitable materials at an early stage and, because of the long time and large number of completed packages involved in the tests, Kodak has found, prevents premature adoption of a possibly unsuitable material.

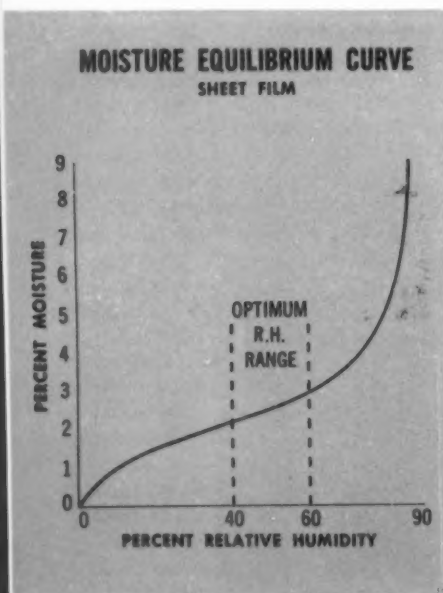
Kodak's moisture-analysis method used in determining both moisture content of packages under test and the various moisture equilibrium curves is a simple weight-evaluation procedure.

Suitable samples are taken from the packages in the rooms in which the conditioning is done and are weighed in tared weighing bottles. Samples are then placed in a vacuum chamber where the pressure is reduced to about 50 microns. After a suitable time at this low pressure, the samples are again weighed and the weight loss is computed and expressed in terms of per cent weight change from the original weight.

This method of measuring moisture content of photographic films was extremely useful during the war because of the very large number of samples that could be analyzed daily by semi-technical laboratory assistants. During the war nearly 1,000 samples were analyzed daily. Since that time the number averages about 500 per day.

Kodak package-testing procedure is probably among the most highly developed in all modern industry.

CREDIT: Barrier material, The Dobeckmum Co., 3301 Monroe Ave., Cleveland 13, Ohio; Shellmar-Betner Flexible Packaging Div., American Can Co., Mt. Vernon, Ohio; Reynolds Metals Co., 2500 S. Third St., Louisville 1, Ky.



OPTIMUM MOISTURE content in photographic film lies within range of 40 to 60% r.h. If film moisture content drops below optimum, film will dry out. If film becomes too moist, its photographic sensitivity deteriorates and the film may become tacky.

aging development, Kodak has established a definite system for testing raw materials and packaging methods on sensitized-film products. The system covers three steps, each of which can be a stopping place if results show beyond further doubt that the material or process cannot be applied successfully to film packaging:

1. Evaluation of new materials for (a) determination of water-vapor permeability; (b) compatibility with photographic emulsions; (c) physical characteristics; (d) tightness of closure. If the material successfully meets the standards set up for the characteristics measured in the first step, it is subjected to the second.

2. Three-month storage test of laboratory-made completed packages at 90 deg. F.—90% r.h. These packages are made to simulate the actual trade package, using film previously conditioned to a given equivalent relative humidity. The packages are made in sufficient quantity to provide valid averages. The film in these packages is analyzed for its moisture content before and after the storage period. To be considered successful, the package during storage has to prevent the



# A program for parts

Reo draws on automotive-industry experience to organize orderly packaging for its power lawn-mower service parts

With almost a million Reo power mowers now in use and tens of thousands more families making the switch to power lawn mowing every year, Reo Motors Lawn Mower Div., Lansing, Mich., largest producer of power mowers for the home, realized something had to be done to organize its packaging program to protect the company's extensive and profitable service-parts business.

For years Reo field men had noted that distributors' and service dealers' shelves and drawers were often a confusion of nuts, bolts, carburetors and gas tanks. Parts men also often complained of corrosion of material in their inventory as well as loss due to breakage and pilferage. And the jumbles of power lawn-mower parts lying on dusty shelves made stock control and inventory very difficult.

Taking a cue from the automotive industry and its efficient parts-packaging programs, Reo embarked on an over-all packaging project.

A supplier specializing in such packaging activity was called in by Sam Briggs, vice president in charge of lawn-mower sales. An analysis of Reo's problem indicated that it consisted of four factors: design, standardization, identification and protection.

First essential was the selection of a distinctive design and color combination to give instant recognition to Reo parts. After members of the service, sales and advertising departments gave careful consideration to a number of designs submitted by independent designers, a distinctive white, green and red trade symbol was chosen for reproduction on every Reo lawn-mower parts package, thereby giving an over-all family resemblance.

The next problem was the development of standardized shapes and sizes of packages that would handle the greatest variety of parts in the smallest number of package types. After months of research in which the engineering staff, field service representatives and distributors cooperated,



**UNIFORM TRADEMARK** brings all packages into Reo family. Shown is a typical group among the 18 standardized shapes of fibreboard boxes and six sizes of envelopes which presently takes care of the company's entire requirements. Correct identity is provided by imprinting the part number, the exact part name and the quantity of product enclosed.

12 standardized sizes and shapes of tough fibreboard folding boxes and six sizes of envelopes were adopted to cover all present requirements based on appropriate quantities and units for the average field stock.

For example, if the factory recommends that a stock of 24 units be kept for a particular type of nut, then the package to hold that nut is designed for that quantity. In this way, costly handling, sorting and counting at every point of distribution is greatly reduced. A special label is used in instances where the standardized boxes or envelopes are not practical.

To assure clear and accurate identification of each part, every box, envelope and label has imprinted on it the part number, quantity and exact part name. Formerly when parts were designated by hand or typewritten labels, words and numbers often were found to be illegible or incorrect.

From experience gained in the automotive and electrical appliance fields, Reo has been able to adopt the newest

packaging methods to protect parts from rust, corrosion, dust and damage during shipment. Weatherproof shipping boxes of a specified strength to exceed all normal hazards encountered in shipping and handling are used. Delicately machined parts receive special moisture-resisting oil treatments. Finely adjusted parts, such as carburetors and valves, are given shockproof packing.

Reo executives believe their new service-parts packaging program is the first of its kind in the power mower industry. Dealers are now receiving their parts orders in the new packages and soon their entire inventories will be supplied in these colorful, efficient new cartons and envelopes. The new packaging, according to Mr. Briggs, answers a long-felt need and sets an example in the power mower industry that others no doubt will follow.

CREDIT: Folding cartons and envelopes, The Great Lakes Box Co., 7275 Westworth St., Cleveland, Ohio.



## "Foods in glass more than anything else contribute to impulse sales"

says ED SILVERBERG, General Manager,  
Pick-N-Pay Super Markets, Inc.  
Cleveland, Ohio

"Fruit and vegetable items in glass have a sparkle, are colorful and attract the shopper's attention in a way that makes glass-packed merchandise a very valuable part of our canned-goods sections.

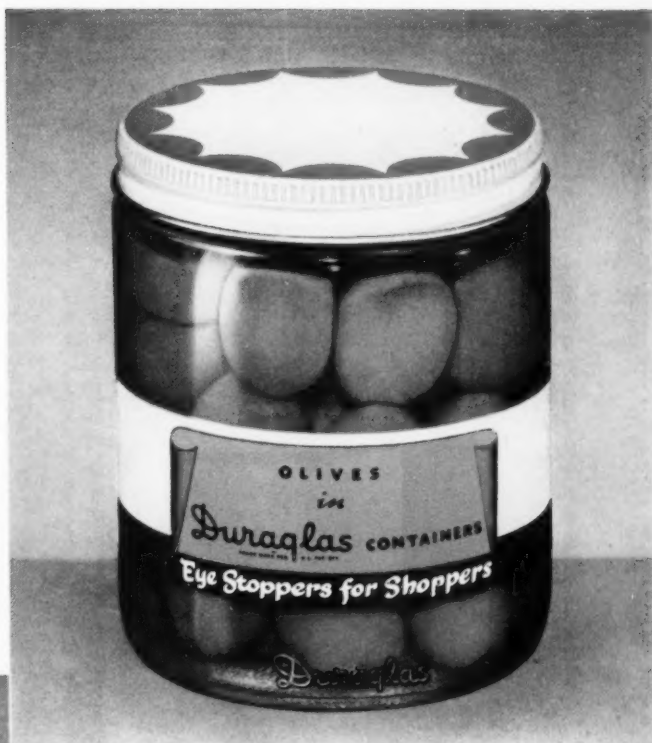
"We are interested in quality packs of glass-packed fruit and vegetables. We take advantage of practically all such items that are offered and give them eye-level location on our shelf sections because we find they fit into the modern shopper's self-service shopping scheme of things.

"We believe an increasing supply of items and brands of foods in glass will do more than anything else to contribute to impulse, fast turnover, self-service sales."



**Housewives** have two strong reasons for favoring glass salespackages. First, they can see the quality of product they are buying; and second, the glass container is so easy to use and store in refrigerators.

*Today's self-service  
selling demands a  
self-selling  
package—  
GLASS!*




Appetizers in glass salespackages with colorful labels create both appetite and eye appeal. Result—displays in glass packs boost impulse sales.

With the growth of self-service, your product no longer has the sales advantage of personal selling by clerks. The package should be geared to quick selling for you during the few seconds the shopper decides what to buy.

Glass is an ideal salespackage for olives among many fine food products because it attracts shopper's attention with sparkle and color . . . stimulates impulse sales by showing off the deliciousness of the product inside . . . convinces with an honest display of the quality of your brand.

And, glass wins repeat sales, too. Easy-to-use glass packages offer housewives a safe, convenient way to store unused portions in refrigerators.

DURAGLAS CONTAINERS  
AN  PRODUCT

OWENS-ILLINOIS  
GENERAL OFFICES • TOLEDO 1, OHIO



IT'S ALL DONE WITH FLAPS in this beautifully simple one-piece shipping container which requires no extra pieces to form cell dividers. End flaps cover and divide two end cells on each side.

# Self-partitioning carton

Stamped from a single piece of corrugated, it sets up for G.E. into an exceptionally strong 10-cell shipper

A one-piece, die-cut, corrugated carton so ingenious in its construction that in a few seconds it can be set up, by reason of its own die-cut flaps, into a 10-cell container of such exceptional strength that the bottom need not always be taped or glued is now being successfully used by the General Electric Co., Fort Wayne, Ind., for shipping transformers and other electrical equipment.

The new self-partitioning carton is designed to hold 10 or 20 transformers, with the individual cell sizes of the containers now being used ranging from 2½ by 1½ by 3½ in. to 8½ by 4½ by 5½ in. The container blank may be die cut from a single sheet of board, or it may be formed from two joined-together sheets.

Adoption of the carton with its unusual flap extensions has made it possible for the company to realize many savings. As one instance, the interlocking feature of the flaps makes a tight closure for the bottom, eliminating the need in the lighter weights for a taped or glued closure. Also as an outgrowth of the sturdily engineered carton, complaints and damage claims from customers have shrunk to practically zero.

The greatest tribute to the self-partitioning carton is a 20% reduction in the cost of packaging materials and a 40% reduction in labor costs on almost every application. In an earlier method of packaging, considerable labor and packaging materials were involved. Employed at that time were

regular slotted corrugated fibreboard containers which entailed wrapping the individual transformers and using die-cut inserts or partitions as cushioning or blocking to protect the products during shipment.

Excessive costs spurred General Electric to evolve a more satisfactory method. Examined first was a patented, six-cell, one-piece folding carton having flap extensions which form the cells inside the box. Here at least, the company found, separate partitions and inserts were unnecessary—but the limitation of six cells ruled the container out. Headed in the right direction, however, the company agreed that the container should be self-partitioning, but should have 10 cells instead of six and that all three dimen-



sions of the individual cells should be variable, depending upon the carton size.

The first application for the newly designed container was for a fluorescent lamp ballast at the company's Danville, Ill., plant. Since this first use, many other applications have been found. Control transformers, amplistats, luminous tube transformers and permafil transformers are now packaged in the 10-cell containers. Twenty of the smaller-size transformers are packaged in one of the cartons by placing two transformers, one on top of the other, in each of the cells.

Now adopted as the standard carton for this type of product, the 10-cell carton requires only 11 box sizes, while formerly 16 box sizes were needed. This, of course, has meant a sizable reduction in the company's package inventories.

Three basic steps, performed manually but rapidly on General Electric's production line, are called for in the assembly of the cartons. A prerequisite to understanding the assembly is to picture clearly the structure of the cartons—four die-cut flaps on what eventually becomes the bottom of the carton and four flaps on the top, only two of which, both sides, are die cut. The regular, unslotted flaps are for closing the formed carton.

Following are the steps in assembling the cartons:

Step 1: Starting with the four die-cut bottom flaps, tuck the narrow die-cut side flaps into the carton. These flaps are grooved to interlock with the remaining two flaps waiting to be brought into position. Take each of the remaining die-cut flaps, bend along score lines and insert into

grooves of the first two flaps. Now formed is the bottom portion of the carton which exhibits great strength and requires additional tape or glue closure only for the heavier types of products.

Step 2: Turn the carton over so it is now standing upright. It is generally necessary to push the first two flaps down against the bottom of the container for a snug fit. At this point, two cell walls, formed by the four bottom flaps, are in position.

Step 3: The two additional walls, still needed to form the 10 cells, are constructed by tucking each of the two slotted top flaps down into the two die-cut sections remaining inside

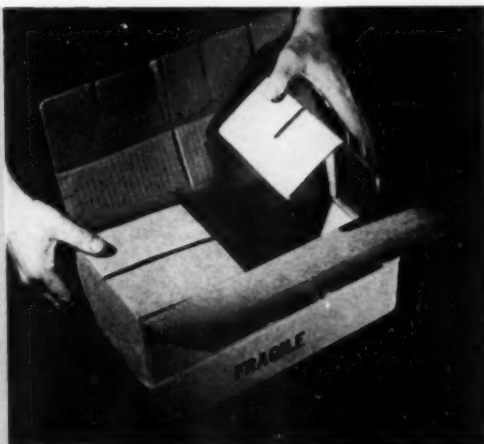
the carton. However, this last step is taken only after the two transformers are put in place in the two cells on each end of the carton. This is because the slotted top flaps cover the cells when they are put in position. The two remaining, unslotted flaps are then brought down on the carton and sealed in place.

Operators can assemble the cartons rapidly once they hit a stride and certainly save much time over the previous system of individual wraps and inserts.

CREDIT: Corrugated cartons, The Hinde & Dauch Paper Co., 407 Decatur St., Sandusky, Ohio.

## HERE'S HOW IT WORKS

**BOTTOM UP.** slotted end flaps are broken at score and pushed in place. Their end sections form middle two cross-wise dividers.



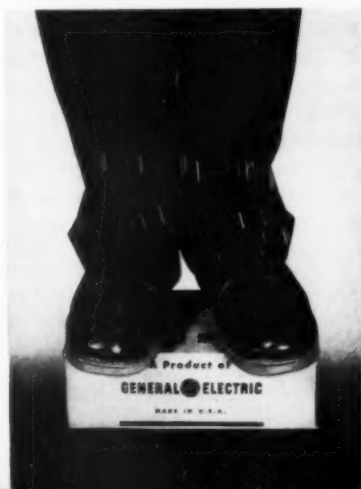
**LENGTHWISE FLAPS** on the bottom form a double lengthwise divider, slotted to lock with all of the four crosswise partitions.



**TOPSIDE UP,** the carton is completed by bringing top end flaps over and down into slots of lengthwise divider. Normally, the product (transformers in this case) would be placed in end cells before this final operation is done.



**STRENGTH** of the completed box, even when empty, is sufficient to support a 200-lb. man.





## Jell-O's shelf-display technique

This "shelf-frame" display offered by the Jell-O Co. Div. of General Foods Corp. suggests a new space-saving attention-getter technique for the supermarket shelf. It is being used to aid grocers in promoting a new line of Jell-O instant puddings in three flavors—chocolate, vanilla and butterscotch. By means of the shelf frame, the grocer is enabled to feature the new items without using additional display space. Attention is attracted to the Jell-O instant puddings right where the packages are stacked on the shelf, at the point of sale.

The unit consists of four separate pieces. The two barber-pole-type vertical frames are designed to be inserted into the shelf at the sides of the packages to set the Jell-O instant pudding section off from other items. The top piece, which fits over the top row of packages, is die cut into the shape of four arrows, each printed with the word "New," and pointing to the packages below. The bottom piece, carrying sell copy and an oval patch for price marking, slips under the first row of packages.

CREDIT: Shelf-frame display, Spurgeon Tucker, New York.

# DISPLAY

## Cozy fireplace promotion of soft drinks



Canada Dry's entire line of soft drinks is effectively displayed in this eye-compelling self-service "Fireplace" floor stand that measures almost 5 ft. in height. The display suggests the company's soft drinks as winter-time beverages and it has been reported to be highly effective in promoting impulse sales in retail outlets. The unit is constructed of eight wooden beverage cases covered with corrugated paper printed in a red brick design. The eight cases are arranged around the central display card—a full-color lithographed fireplace scene measuring 23½ in. wide and 28½ in. high. Atop the fireplace is a reproduction of a fireplace clock—also lithographed in full color. Quart beverage bottles are arranged in the covered wooden cases and on top of the display, with price prominently shown at four places. Six-bottle carry-home cartons of soft drinks are arranged on either side of the unit.

CREDITS: Printed corrugated paper, Sherman Paper Products Corp., Newton Upper Falls, Mass. Display cards, John M. Haass, New York.

## Lipstick unit with testing mirror

Three features are combined by the Northam Warren Corp. in this Cutex Stay Fast Lipstick display: a full-sized mirror, a color chart and lipstick samples. Aimed at the mass lipstick market, this attention-getting unit holds 2 doz. lipsticks in six of the best-selling shades.

With the unit, the retailer is provided with 48 Cutex lipstick samples, free of charge. These samples enable customers to make a quick, simple color choice and also eliminate a costly problem for the retailers, who suffer losses from soiled and smeared lipsticks used by customers as testers. Copy at the bottom tells the shopper to ask the clerk for sample. When she receives it, the customer views it on her lips in the large mirror in the display. Each lipstick fits into its individual slot at the sides. The shade of each is printed beneath each lipstick. Price is prominent on the rectangular patch that shows each shade in its actual color. The unit, designed to help retailers sell and promote these lipsticks, is part of a merchandising plan backed up by one of the largest advertising campaigns ever undertaken by the company.

CREDIT: Display, Bon Ton Press, New York.



## GALLERY

### Fake lighting with reflected foil through acetate

Bourjois's bid for mid-winter sales is this counter merchandiser for what the company calls its Evening in Paris "Celebration," offering attractive limited-time values of three different fragrance trios: colognes, perfumes and fragrance sticks, specially packaged for the promotion. Each trio is made up of Evening in Paris in the regular \$1 size, combined with two new fragrances, Montmartre and Folies Bergere, available either as perfumes, colognes or fragrance sticks. The Celebration trios, a regular \$2.25 value selling for \$1.25 each, are packaged in individual die-cut cartons.

Back piece of the display carrying the words, "Evening in Paris Celebration," is equipped with a frosted acetate window arranged in juxtaposition to a projection of aluminum foil that reflects overhead store lights as though the display itself were electrically lighted.

CREDITS: Back piece, Newark Paper Box Co., Newark, N. J. Box, Paul T. Freund Corp., New York. Trio cartons, Lord Baltimore Press, Baltimore, Md.





# Tagged as a gift

Red-ribboned corrugated container for kitchen ware

does a year-round, self-selling job for Lincoln Metal Products



"GIFT TAG," to be filled in by giver, gives final fillip to design of this well-printed, white-linen-finish corrugated container, typical of Beautyware line. It seems to have appeal even for non-gift buyers. Complete copy and illustration on side panels make the products self selling.



HANDLED WITH GLOVES during the packaging operation, the chrome-finished products are so well protected that retail dealers have no hesitancy about selling them in sealed packages.

The idea that year-round gift appeal can be incorporated in a package is now widely accepted,\* but most companies who adopt this strategy tend to hedge their bets—to adopt a design that doesn't come right out and say "gift," yet could easily be visioned in that role.

In the new packaging for its Beautyware line of kitchen metal specialties, the Lincoln Metal Products Corp., Brooklyn, hasn't hedged. Its colorfully printed, linen-finish corrugated cartons are aimed squarely at the gift buyer. It didn't cost a cent more to design them that way and Lincoln figures it won't stop the consumer who is buying the item for her own use—may even increase the appeal for her.

The Beautyware line includes such items as bread boxes, canisters, disposal units with deodorizers and waste baskets. For the shopper who might not think of such utilitarian items as gifts, the suggestion is forcefully presented by printing, on the white linen-weave surface of the corrugated, a handsome red "ribbon" crossed on the front surface under a big bow and with a built-in "to" and "from" gift tag. Another panel carries a well-detailed illustration of the product packaged within.

Irving Kates, Lincoln's president, comments that the spark for the gift idea was provided by the customers themselves. When the peak periods for selling the products as gifts were the months of May, June and December, there appeared to be little justification for a year-round special carton. The change came when the company observed an upturn in day-to-day gift sales—a highly desirable trend which the organization is naturally eager to push further.

Another sales advantage, due to the complete sales story that the package tells, is that customers are helping

themselves without bothering to hunt out a sales clerk. A delight to the stores is that they need not take time to wrap the sometimes bulky products with the usual gift packaging frills.

Pre-packaging—that's the way this company thinks of it—means that the customer is buying "blind" and it puts a responsibility on the company to deliver the uninspected product in good condition. For this reason Lincoln has established rigid methods of packaging and inspection.

So delicately is the Beautyware line of metalware handled that workers and inspectors alike are required to wear gloves to protect product finishes. Also, as a further precautionary measure, Lincoln has been experimenting for some time with inner and outer wrappings. It was found, for example, that two different types of protective coverings were needed to prevent scuffing and water staining of the chrome ware.

Two widely used protective packaging materials were brought into the production line. Before the carton-loading stage, the tops and sides of bread boxes, for example, are covered with masking tape. The front of the bread box—a hinged cover which doubles as a slicing board—is wrapped in a type of tissue with a waxed kraft backing. Each canister in a set of four, each wastebasket and each disposal unit are wrapped in the same manner. The items are then carefully cradled in corrugated board and placed in the gift carton.

The assurance of quality and the gift appeal have apparently resulted in a welcome sales tonic.

CREDITS: Corrugated carton<sup>2</sup>, Grand-City Container Corp., 2001 Tonnelle Ave., North Bergen, N. J. "Mar-Not" masking tape, Minnesota Mining & Mfg. Co., 900 Fauquier Ave., St. Paul 5, Minn. Tissue and waxed kraft backing, Kimberly-Clark Corp., Neenah, Wis., and Royce Paper Co., 606 Bergen St., Brooklyn.

\* See "The Gift Market," MODERN PACKAGING, May, 1951, p. 79.



*You're So Smart to Smoke*

# Parliaments

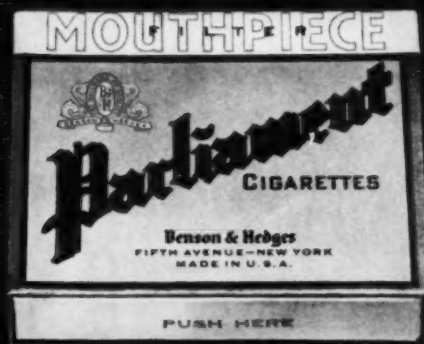
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# How CLARK speeds up packaging KEEPS COSTS DOWN



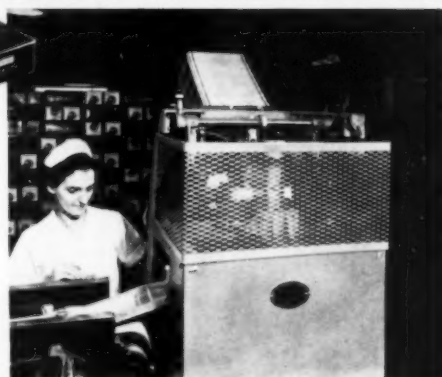
## MODEL DF-1

Individual Clark bars are wrapped by "Package" Model DF-1 machines. Each machine has a speed of 120 bars a minute. Forms a box-like wrap over the most irregularly shaped bar. Printed design on the wrapper is accurately registered by electric eye.



## TRAY-LOCK

Cardboard trays for Clark's multiple-unit packages are formed from inexpensive die-cut blanks by a "Package" Tray-Lock machine. With this machine, sturdy trays can be made at speeds up to 90 a minute. It is adjustable for various sizes.



## MODEL FA

Trays containing six Clark bars are overwrapped in colorful printed cellophane by a "Package" Model FA. Most widely used machine in the packaging field, the FA has a speed of 100 packages a minute.



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# TECHNICAL

ENGINEERING • METHODS • TESTING

Charles A. Southwick Jr. • Technical Editor

## Meat-packaging criteria

A review of recent developments in methods and materials,  
with new comparative test data. By JOHN M. RAMSBOTTOM\*

For the past few years self-service merchandising of meats has been the motivating force in the development of better packages for meats, both from the standpoint of improved package appearance and greater product protection. The package becomes the salesman in self-service merchandising, thus every effort must be made to make the package as attractive and convenient as is practical. Likewise, if repeat sales are to be expected not only must the product be of good quality, but the package must have functional characteristics which will protect the meat against shrinkage, discoloration and changes in aroma and flavor until it is used.

This paper is primarily concerned with current trends in packaging meats and a discussion of the protective characteristics of different packaging materials, exclusive of glass and metal containers. The package requirements of fresh meats, poultry, frozen meats and cured meats are different and will be discussed individually.

### Fresh meats

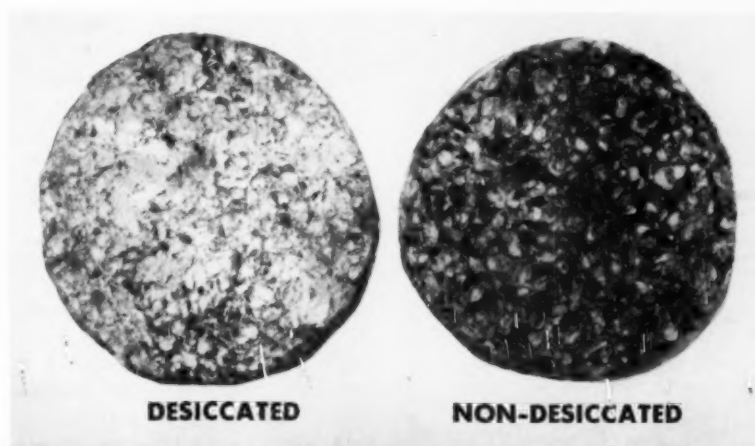
The selection of packaging materials for fresh meats is based in part upon a functional requirement of the packaging material that must permit the free passage of air to the cut surface of the meat. The oxygen of the air

reacts with the myoglobin of the fresh meat to produce oxymyoglobin which has a bright red color. This is the color which must be developed and maintained for best display of the meat. The amount of oxymyoglobin in the meat determines the color, which ranges from a bright cherry red for beef to a delicate pink for veal or pork.

If a packaging material is used which materially restricts the passage of oxygen, the cut surface of the fresh meat will darken within an hour because of a change of oxymyoglobin in the superficial tissues to purple-colored myoglobin. Upon extended storage this pigment oxidizes to an undesirable brown-colored metmyoglobin.

Proper fresh-meat packaging materials, which include fresh-meat cellophane and fresh-meat Pliofilm, allow transmission of sufficient oxygen to maintain the desired color. Special fresh-meat wrapping papers and special types of paperboard are recommended for separating slices or cuts of meat and for packaging where transparency of the packaging material is not a merchandising requirement. These air-permeable films and papers also restrict the loss of moisture from fresh meats and restrict the development of dark color associated with drying of the meat surfaces.

Packaging materials for bone-in fresh meats must be very resistant to puncture and tear because the sharp



1. EFFECT of freezer desiccation on the appearance of sliced hamburger.

\*Head, Packaging Division, Research Laboratories, Swift & Co., Chicago. From a paper presented at the Symposium on Technology of Food Packaging Materials, 124th National Meeting, American Chemical Society, Chicago.



2. EFFECT of bridging and frosting on the appearance of packaged frozen poultry: (1) modified saran vacuumized package showing the film in complete contact with the poultry and (2) cellophane package showing bridging of the film, also frosting on under side of the film where it does not come in contact with the poultry.

edges of cut bones contribute to package breakage.

The characteristic stretchability of Pliofilm is helpful in obtaining a compact package which is resistant to tear and breakage. However, there is need for shrinkability in films for fresh meats to assure a package which is free of voids between the film and the meat.

### Poultry

Large volumes of chickens and ducks are prepared by processors and bulk shipped in ice to dealers who in turn package the poultry and merchandise it in the unfrozen state.

Packaging materials used extensively in the final package include semi-moistureproof and moistureproof cellophane, Pliofilm, polyethylene and modified saran.

Poultry, both whole and cut in sections, is often placed in paperboard or molded-pulp trays and overwrapped with transparent film. While the present films are fairly satisfactory, increased permeability to air is desirable. Poultry will retain its fresh aroma and keeping quality longer in a package which allows considerable air transmission while at the same time restricting loss of moisture from the package. There is also need for im-

provement in the wet strength of trays, particularly in the case of molded-pulp trays.

### Frozen meats

Most consumer-sized frozen meats and frozen poultry are merchandised in one of the following packages: (1) printed waxed-paperboard cartons with or without inner liners, (2) plain waxed-paperboard cartons with or without inner liners, the cartons being overwrapped with a printed paper, film or foil, and (3) printed wraps of film, paper, foil, as well as laminates thereof.

There is considerable difference of opinion as to the need for transparency or windows in frozen-meat packages. The current trend seems to be away from transparent packages and toward opaque packages. Once a frozen-meat product has an established market, the need for a transparent package to display the product is often overbalanced by the economy and protection from light provided by an opaque package.

Moistureproof cellophane, waxed paper and aluminum foil-paper laminates are extensively used as inner liners and overwraps for paperboard packages of frozen meats and poultry. An experiment was made to determine

their effect on the freezing and thawing rate of ground beef. Packages weighing 12 oz. each were frozen at minus 10 deg. F. and thawed at 80 deg. F. The temperature changes were obtained by the use of thermo-electric couples located in the center of the package which was 2½ in. in depth and 3½ in. in diameter.

The data are summarized in Table I and show that there are only small differences in the freezing rate and thawing rate of the meat, indicating that waxed paper, moistureproof cellophane and aluminum foil-paper laminate have a similar effect on temperature changes when they are used as inner liners and overwraps for paperboard cartons.

Low water-vapor transmission is a primary requirement of packaging materials for frozen meats. Recommended packaging materials have a WVT rate of 1 gm. or less per 100 sq. in. per 24 hrs. under standard TAPPI conditions of 73 deg. F. and 50% relative humidity.

If the packaging material is essenti-

TABLE I—THE EFFECT OF PAPERBOARD CARTON INNER WRAPS AND OVERWRAPS ON THE TIME REQUIRED TO FREEZE AND THAW MEATS

	Freezing time 35 to 0°F.	Thawing time 0 to 35°F.
<i>Carton &amp; inner wrap</i>		
Waxed paper (30# sulfite sheet waxed to 44# with polyethylene and microcrystalline waxes)	7.8 hrs.	5.1 hrs.
Cellophane (300 moistureproof)	8.7 hrs.	5.4 hrs.
Aluminum foil laminate (0.00035 in. aluminum foil laminated to 22# sulfite paper)	8.8 hrs.	5.5 hrs.
<i>Carton &amp; overwrap</i>		
Waxed paper (30# sulfite sheet waxed to 44# with polyethylene and microcrystalline waxes)	8.3 hrs.	5.1 hrs.
Cellophane (300 moistureproof)	10.2 hrs.	5.3 hrs.
Aluminum foil laminate (0.00035 in. aluminum foil laminated to 22# sulfite paper)	10.4 hrs.	4.9 hrs.

ally moistureproof and in contact with the surface of the meat, dehydration of the superficial tissues, commonly referred to as "freezer burn," is prevented. The adverse effect of dehydration on the appearance of the meat is illustrated in Fig. 1.

In addition, shrinkage may become an economic factor if the desiccation is extensive. The desiccated ham-burger in Fig. 1 was not protected with moistureproof packaging materials during the course of one year's storage at 0 deg. F. and after storage weighed 11.5 gms. per cu. in., whereas the frozen, bright-red-colored ham-burger in Fig. 1 weighed 17.2 gms. per cu. in.

Voids between the frozen meat and packaging material should be kept at a minimum; otherwise dehydration and frosting occur at these locations. The frost often forms on the under side of the packaging material. If the packaging material is transparent, product visibility is impaired. This is illustrated in Fig. 2.

An important limiting factor in the storage life of frozen meats is the stability of the fat. Frozen meats may be essentially free of oxidative rancidity after storage periods up to one year if stored at subzero temperatures and if tightly packaged in oxygen-impermeable materials. Such a package will be most effective in preventing rancidity of the fat if the air has been removed from the package and it has been hermetically sealed. A modification of this procedure is used in packaging poultry. The poultry is vacuum packaged in oxygen-resistant, modified-saran film and then frozen. There is need, however, for improvement in the resistance of this film to breakage at low temperatures. If red meats are vacuum packaged before they are frozen, they must be at least partly frozen within a very few minutes after vacuum packaging, otherwise they will change in color from bright red to shades of purple and brown.

Packaging materials used for frozen meats include moistureproof cellophane, Pliofilm, polyethylene, saran, aluminum foil, waxed and plastic-coated papers, plastic-coated films and foils, laminates of the above materials and waxed-paperboard cartons. While these materials are fairly satisfactory for frozen meats and frozen poultry, the ideal packaging material from the standpoint of protection has still to be developed. Briefly, it should be

TABLE II—EFFECT OF RESIDUAL OXYGEN IN VACUUM PACKAGES ON THE COLOR OF SLICED COOKED HAM

Package	Light <sup>1</sup>	Color rating <sup>2</sup>					
		Initial	1 day	2 days	3 days	4 days	8 days
Semi-moistureproof cellophane	8 hrs. per day	9	5	4	3	3	2
Semi-moistureproof cellophane	no light for 2 days, then 8 hrs. per day	9	—	9	5	3	3
Semi-moistureproof cellophane	no light	9	9	9	9	9	7
Saran (1.5 mils) 29" vacuum	8 hrs. per day	9	6	8	9	9	9
Saran (1.5 mils) 29" vacuum	no light for 2 days, then 8 hrs. per day	9	—	9	8	9	9
Saran (1.5 mils) 29" vacuum	no light	9	9	9	9	9	9

<sup>1</sup> "Soft white" fluorescent light, 40-ft. candles.

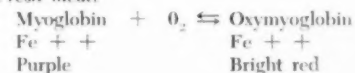
<sup>2</sup> Based on 10 equals "perfection," 1 equals "extremely poor."

moistureproof, oxygenproof, heat sealing, resistant to fracture, puncture and tear, flexible over a wide range of temperatures, resistant to aging, odorless and capable of being stretched and shrunk to insure tight packages.

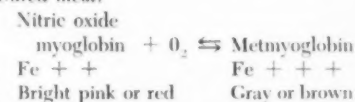
#### Cured meats

In contrast to unfrozen fresh meats, cured meats retain their bright pink and red colors better in an oxygen-impermeable package than they do in an oxygen-permeable package. This difference in packaging requirements is in part brought about by differences in the chemical reactions of the meat pigments with oxygen as related to color:

##### Fresh meat:



##### Cured meat:

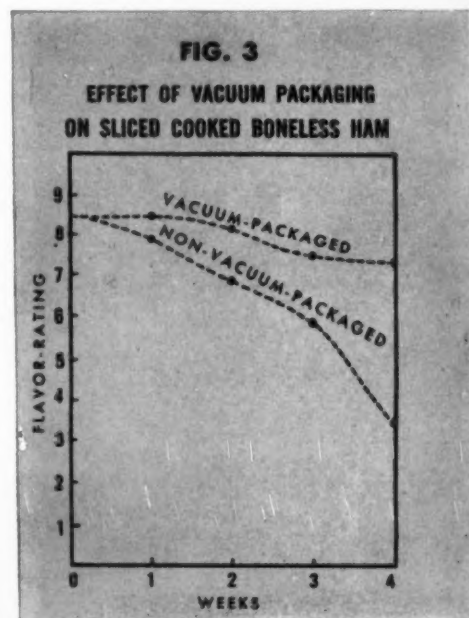


The best display color of cured, smoked and table-ready meats is the bright pink or red color observed immediately after cutting. Unfortunately these bright, attractive colors change to shades of gray and brown when the meats are packaged in oxygen-permeable transparent film and exposed to display-case and store lighting. These color changes are the result of oxidation of the pink-colored nitric oxide myoglobin and nitric oxide myochrome to metmyoglobin and other oxidized pigments. The reaction proceeds slowly in the absence of light

and quickly in bright light, the light acting as a catalyst.

The effect of light on the color of packaged sliced cooked ham is shown in Table II. Ham packaged in semi-moistureproof cellophane faded when exposed to light immediately after packaging or when exposed to light two days after packaging. Ham, vacuum packaged in saran, showed temporary discoloration when exposed immediately after packaging and no discoloration when stored for two days before exposure to light.

The temporary discoloration of the vacuum-packaged ham is caused by



residual oxygen which is not removed from the package at the time of vacuum packaging. Since the package is sealed, no additional oxygen can get into the package. The pigment oxidation reaction plus the normal "biological oxygen demand" of the ham consume the initially entrapped oxygen, eventually producing anaerobic conditions. Through continued effect of normal biological oxygen demand, the pigment is reduced and combines with the curing agents to form the initial pigment, thereby restoring the original normal color of the ham.

By storing the vacuum-packaged ham for two days before exposing it to light, anaerobic conditions were established; consequently, the ham retained its bright color.

Vacuum packaging in oxygen-impermeable materials not only eliminates light discoloration of meats, but also is effective in preventing the development of oxidative rancidity, inasmuch as oxygen is necessary for the development of oxidative rancidity in meat fats and most of the oxygen is removed in vacuum packaging.

The flavor of vacuum-packaged ham and non-vacuum-packaged ham has been compared. One-half-pound packages of sliced cooked ham were stored in a shipping container at 38 deg. F. Each week for four weeks

triplicate samples were removed and scored for flavor according to a rating system wherein 1 was extremely poor and 10 was excellent. The data are summarized in Fig. 3 and show that the vacuum-packaged ham retained its flavor better than ham packaged in a non-vacuumized transparent film.

While this discussion on cured-meat products has centered on vacuum packaging, it should be clearly understood that the advantages of vacuum packaging may also be attained by so-called "gas packaging," wherein the package is first vacuumized, then nitrogen, carbon dioxide or other gas is released into the package until a pressure of one atmosphere or less is reached; then the package is sealed.

Oxygen-impermeable packaging materials, including saran and laminates of cellophane, Pliofilm, polyethylene and aluminum foil, are being used in increasing volume for the vacuum packaging of cured, smoked and table-ready meats.

Packaging materials used commercially for cured, smoked and table-ready meats cover a wide range in water-vapor permeability. Their selection depends upon the kind of meat and trade requirements. The trend is toward packaging materials that are more nearly moistureproof in order

to minimize shrinkage and discoloration. Special papers with built-in water-vapor control—also semi-moistureproof and moistureproof transparent films—are generally used for packaging cured, smoked and table-ready meats.

Packaging materials used for cured, smoked and table-ready meats must be greaseproof. If fat soaks through a package it is objectionable from the standpoint of both handling and appearance. Equally important, if fat is dispersed in a packaging material, it oxidizes rapidly and the rancid odor which develops is soon imparted to the contents of the package. Antioxidant treatment of packaging materials has been found to be effective in delaying the onset of rancidity.

Packaging materials which are satisfactory in greaseproofness include cellophane, Pliofilm, saran and special greaseproof papers.

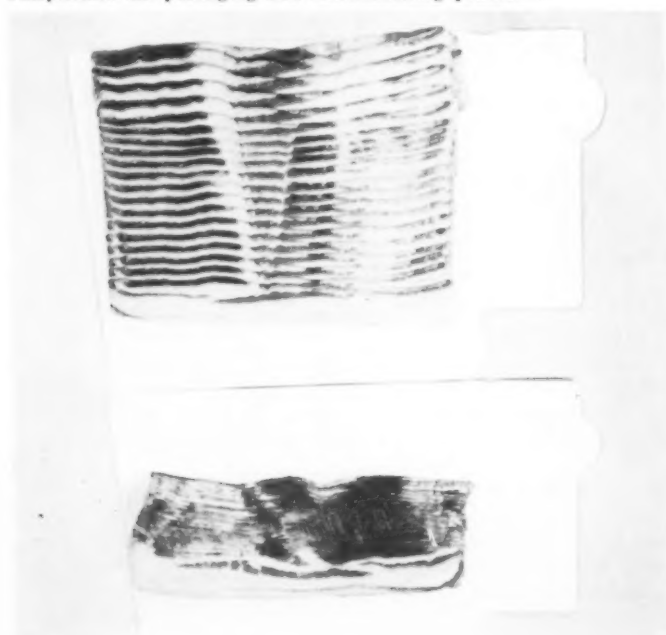
It is an axiom in protective packaging of meats that best keeping quality is obtained when the exposed cut surface is kept at a minimum. Nevertheless, because of consumer preference, bacon and certain other cured and table-ready meats are merchandised in shingle-type packages. By so doing, the surface area of the bacon exposed to air and package is increased 130% over an equal weight of product exposed in a stacked package. Likewise the amount of packaging material required to wrap the product is increased 100% (Fig. 4).

Obviously, an opportunity exists for the development of new non-shingle-type packages which have the consumer acceptability of the shingle-type packages.

Casings made of regenerated cellulose and plastic materials such as Pliofilm, Visten and saran are extensively used in the meat industry. Not only do they serve as molds and containers during the processing of some cured meats and sausage, but in many instances the casings also serve as consumer packages.

Regenerated-cellulose casings have an advantage over plastic films by being fairly permeable to smoke, which permits smoking of the product in the casing. They also promote the development of desirable product appearance and color. However, they are very permeable to moisture and if they are subsequently used as packages the product will shrink and darken in color if not overwrapped (This article continued on page 187)

4. EXPOSED AREA contrasted as between the shingled (top) and stacked sliced bacon. Consumer preference for the shingled style has complicated the packaging and merchandising problems.





# Polyethylene for citrus

Film as a package depends on quality of fruit, rapid movement and ventilation. By HOWARD W. HRUSCHKA\* and J. KAUFMAN†

Fresh citrus fruit has been retailed in consumer units for over 15 years, using mesh bags for oranges and grapefruit, and trays overwrapped with plastic films for lemons and limes. Winston, et al. (3)<sup>1</sup> described the handling and shipping of Florida grapefruit and oranges packed in 8- and 10-lb. mesh bags. They stated that over 40 million 8-lb. mesh bags of oranges and grapefruit were shipped in the 1947-48 season. Since then the shipping of citrus fruit in consumer units has increased considerably. Winston and his co-workers noted the rough handling in loading, during transit and after arrival at market and the resultant injury to the fruit. They also pointed out the needs for a master container to protect the fruit from crushing, for low transit and holding temperatures to retard decay and for packaging of only good-quality fruit to avoid loss in repacking.

Hruschka and Kaufman (1) showed that a variety of films can be used successfully in packaging lemons and that low temperature and moisture-proof films prolong their shelf life. Rygg (2), in holding tests comparing various film bags with mesh bags for California oranges, found that the best results were obtained with perforated films. He reported the tendency of decaying fruit in the film bags to affect the flavor of the sound oranges in the same bag.

The polyethylene bag, which is less expensive than the mesh bag now in use, has recently been advocated for use in marketing fruit in a master container (see Fig. 1). Packers and film manufacturers felt that the saving in bag price together with the reduction in crushing, flattening and other



1. MASTER CONTAINER used experimentally with pre-packaged oranges. Each of the containers holds eight 5-lb. polyethylene bags of oranges. The container needs further development for more adequate cooling.

damage (see Fig. 2) would more than pay for the master container and thus they could get the fruit to market with less waste and with little or no increase in cost. They were also interested in learning whether the polyethylene film could successfully be used to overwrap trays.

The tests here reported were initiated to compare mesh bags with perforated and non-perforated polyethylene bags as containers for Florida oranges and grapefruit and to compare unwrapped and polyethylene (perforated and non-perforated) overwrapped trays for lemons and limes. Particular attention was given to differences in decay, weight loss, appearance, flavor of juice and shelf life.

## Materials and methods

Standard 5-lb. consumer-sized polyethylene or cotton-mesh bags each packed with ten to fifteen 216-size Florida oranges or with five 54- to 70-size Florida grapefruit, and wrapped or unwrapped chipboard trays each packed with four California lemons or five Florida limes were used in conducting these tests.

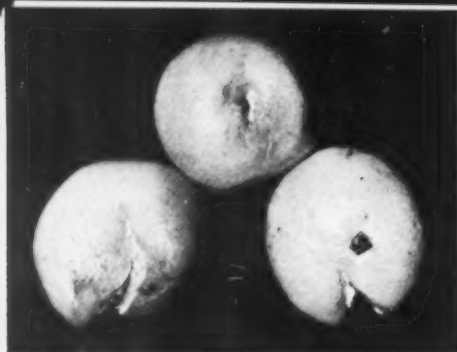
Half of the grapefruit were treated prior to shipment with Dowicide A-hexamine while the other half were not so treated. The 150-gauge polyethylene bags were either non-perforated and tightly sealed or each was perforated with eight  $\frac{1}{4}$ -in. holes. The overwrapped trays were wrapped with 150-gauge polyethylene film which was either non-perforated or perforated with two  $\frac{1}{4}$ -in. holes per package.

The packages of fruit were weighed and placed at 46 deg. F. and 80% relative humidity (high humidity), 70 deg. F. and 80% relative humidity (high humidity), and also at 70 deg. F. and 50% relative humidity (low humidity).

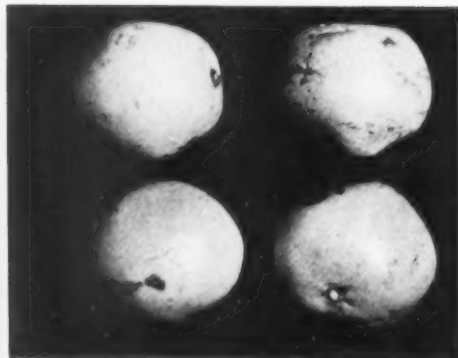
(Since the packages in some of the orange tests were not held at all these storage conditions, the data for oranges are tabulated in three groups as indicated in Table I.) The packages were removed for inspection after three and seven days. At each inspection all packages were reweighed and determinations were made of carbon-dioxide and oxygen contents of the package atmosphere

\* Assistant Plant Physiologist and † Assistant Plant Pathologist, Bureau of Plant Industry, Soils and Agricultural Engineering, U. S. Department of Agriculture, New York. This is a report of a study carried on under the Agricultural Marketing Act (RMA Title II). The cooperation of the Atlantic Commission Co. and R. Schnor and J. H. Brezinski of Roto-Bag Corp., New York, is acknowledged by the authors.

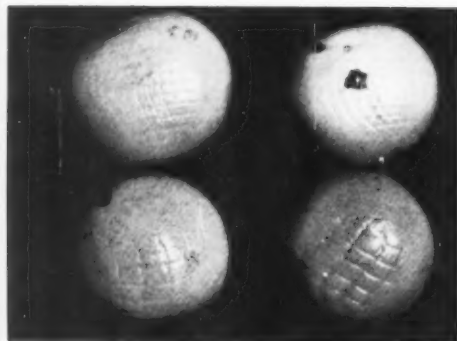
<sup>1</sup> Numbers in parentheses identify "References" appended.



**CRUSHING**



**FLATTENING**



**MESH-BAG MARKS**

**2. INJURIES** observed in Florida oranges shipped by rail to New York City in mesh bags unprotected by master container.

in the perforated and non-perforated polyethylene bags or overwrapped trays.

After each package was opened, observations were made on odor, firmness and freshness of the fruit and flavor of the juice. In addition, observations on yellowing were made on the limes. The inspection data are summarized in Tables I to IV. Several tests were made with each of the four citrus fruits tested. The values shown in the tables were obtained by computing percentages based on the

total number of fruit in each lot for each test and then averaging these test percentages.

### Results

*Oranges:* The data covering the six orange tests are summarized in Table I.

Weight loss was greatest in fruit packed in mesh bags. It was much less in perforated-polyethylene bagged fruit and was least in fruit packed in non-perforated polyethylene bags. In general, weight loss was greatest in fruit held at 70 deg. F.-low humidity and least at 46 deg.-high humidity. Under the driest conditions the perforated-polyethylene bagged fruit lost only 1.3% during seven days' storage, while the fruit in mesh bags lost 10%. The comparable packages at 46 deg. lost 0.2 and 1.2%, respectively.

Fresh appearance and firmness were closely associated with prevention of weight loss. In general, softening of the fruit was detected after the loss in weight was about 3%. Slight wilting was evident after it was about 3 to 5%. Fruit held at 46 deg. F. remained firm and had good, fresh appearance for the full test period (seven days) and there was little difference between the fruit in the mesh and that in polyethylene bags. Fruit held at 70 deg.-high humidity remained firm and fresh for the full test period when packed in polyethylene bags. When it was packed in mesh bags, however, some softening and slight wilting were found at the seven-day withdrawal. Fruit held at 70 deg. F.-low humidity generally remained firm or fairly firm throughout the test when packed in polyethylene bags, but some softening and slight wilting were noted even as early as three days in lots packed in mesh bags.

Carbon-dioxide content as high as 19.6% (with 4.5% oxygen) and oxygen content as low as 1% (with 14.2% carbon dioxide) were found in the atmosphere of the non-perforated polyethylene packages. In one test, off-odors and off-flavors were observed in fruit held at 70 deg. F. No change in package atmosphere was observed in the perforated packages. In tests not reported here, 5-lb. polyethylene bags perforated with only two holes developed 3.4% carbon dioxide and 17% oxygen within the package atmosphere. No off-flavors or off-odors were found in either the perforated-film packaged fruit or in the mesh-bagged fruit. In flavor tests, most

observers rated the juice of oranges from perforated-polyethylene and mesh bags acceptable. More observers gave the acceptable rating to juice of oranges from mesh and perforated packages in which there was either no decay or only stem-end rot than to that of fruit in similar packages containing penicillium rot. Fewer observers gave the acceptable rating to the juice of oranges from non-perforated polyethylene packages than to the juice of oranges from perforated polyethylene or mesh bags, regardless of whether decay was present. It is therefore advisable to perforate polyethylene bags with the equivalent of at least eight  $\frac{1}{8}$ -in. holes to reduce the possibility of developing off-flavors.

Little decay was found in fruit held at 46 deg. F. regardless of container type, while at 70 deg. commercially important amounts were noted at three days and excessive amounts at seven days. Decay was higher in fruit in polyethylene bags than in fruit in mesh bags.

In tests not reported here little difference in keeping quality was found in fruit packed in polyethylene bags perforated with eight, 16 or 32 holes.

*Grapefruit:* The data for the two grapefruit tests are tabulated in Table II.

Weight loss was greatest in the mesh-bagged fruit held at 70 deg. F.-low humidity, the untreated and Dovicide A-hexamine treated lots losing 5.2% and 6.9%, respectively, in seven days. Weight losses of fruit in the film bags were much less. Lower weight losses were found at 46 deg. than at 70 deg.

Throughout the test the fruit remained fresh and firm in all lots except those in the mesh bags, which were wilted and soft after seven days at 70 deg. F.-low humidity.

Analysis of the enclosed atmospheres in non-perforated packages showed that the carbon-dioxide content ranged from 1.6 to 4% and the oxygen content ranged from 11.5 to 18.5%. No change in package atmosphere in perforated packages was found. No difference in taste of the fruit in packages of the three types was observed.

Since only small numbers of fruit were involved in these tests, no definite statements can be made concerning the effects of type of package on decay. Practically no decay was found at 46 deg. F., but a moderate amount developed at 70 deg.

TABLE I—WEIGHT LOSS AND DECAY IN FLORIDA ORANGES PACKAGED IN PERFORATED AND NON-PERFORATED POLYETHYLENE BAGS AND MESH BAGS, HELD AT 46 DEG. F. AND HIGH HUMIDITY OR 70 DEG. AND HIGH OR LOW HUMIDITY FOR THREE AND SEVEN DAYS

Group <sup>1</sup> and bag type	Weight loss at:						Decay at:					
	46°-high humidity		70°-high humidity		70°-low humidity		46°-high humidity		70°-high humidity		70°-low humidity	
	3 days	7 days	3 days	7 days	3 days	7 days	3 days	7 days	3 days	7 days	3 days	7 days
Group I:												
Non-perforated polyethylene	0	0.1%			0.1%	0.3%	0	0			3.0%	13.7%
Perforated polyethylene	0.2%	0.2%			0.6%	1.5%	0	0			5.2%	8.1%
Mesh	0.7%	1.2%			2.6%	6.0%	0	1.8%			2.2%	5.2%
Group II:												
Non-perforated polyethylene		0.2%	0.1%	0.2%			0	0	0	15.6%		
Perforated polyethylene		0.5%	0.1%	0.4%			0	0	2.2%	24.4%		
Mesh		2.3%	1.8%	3.3%			0	0	2.2%	11.1%		
Group III:												
Non-perforated polyethylene	0.1%	0.1%	0.1%	0.3%	0.2%	0.7%	0	0.8%	4.2%	33.5%	13.3%	48.4%
Perforated polyethylene	0.1%	0.2%	0.4%	0.8%	0.5%	1.3%	0	0	8.4%	37.5%	6.7%	30.0%
Mesh	0.8%	1.2%	1.8%	3.2%	4.0%	10.0%	0	3.3%	5.0%	20.8%	8.4%	23.3%

<sup>1</sup> Group I summarizes three tests with fruit held at 46 deg. F. and 80% relative humidity and 70 deg. and 50% relative humidity. Each value is based on fruit in seven replicate packages. Group II summarizes one test with fruit held at 46 deg. F. and 80% relative humidity and 70 deg. and 80% relative humidity. Each value is based on fruit in three replicate packages. Group III summarizes two tests with fruit held at 46 deg. F. and 80% relative humidity, 70 deg. and 80% relative humidity and 70 deg. and 50% relative humidity. Each value is based on fruit in seven replicate packages.

TABLE II—WEIGHT LOSS AND DECAY IN FLORIDA GRAPEFRUIT PACKAGED IN PERFORATED AND NON-PERFORATED POLYETHYLENE BAGS AND MESH BAGS, HELD AT 46 DEG. F. AND HIGH HUMIDITY OR 70 DEG. AND HIGH OR LOW HUMIDITY FOR THREE AND SEVEN DAYS

(Each value is based on fruit in five to seven replicate packages)

Treatment and bag type	Weight loss at:						Decay at:					
	46°-high humidity		70°-high humidity		70°-low humidity		46°-high humidity		70°-high humidity		70°-low humidity	
	3 days	7 days	3 days	7 days	3 days	7 days	3 days	7 days	3 days	7 days	3 days	7 days
Non-treated												
Non-perforated polyethylene	0	0	0	0	0	0.2%	0	5.0%	10.0%	15.0%	10.0%	10.0%
Perforated polyethylene	0.1%	0.1%	0.2%	0.3%	0	0.6%	0	0	0	2.5%	6.7%	10.0%
Mesh	0.6%	2.0%	0.9%	2.2%	2.0%	5.2%	0	0	5.0%	5.0%	3.4%	6.7%
Dowicide A-hexamine treated												
Non-perforated polyethylene	0	0	0	0.1%	0	0.4%	0	0	0	5.0%	0	13.4%
Perforated polyethylene	0	0.6%	0	0.2%	0.2%	0.5%	0	0	0	0	0	0
Mesh	0.2%	1.8%	1.3%	2.8%	2.4%	6.9%	0	0	0	15.0%	0	3.4%

**Lemons:** The data covering the six lemon tests are summarized in Table III.

Little weight loss was found in lemons overwrapped with polyethylene under any of the three storage conditions or in lemons in open trays held at 46 deg. F. All lots that showed little weight loss remained fresh in appearance. Slightly more weight loss was noted in naked lemons stored at 70 deg.-high humidity than in those stored at 46 deg.-high humidity. High weight loss together with less desirable appearance was noted in naked fruit stored at 70 deg.-low humidity.

The carbon dioxide of the package atmosphere ranged from 0 to 2% and the oxygen content from 17 to 20%.

No off-flavor or internal physiological breakdown was noted.

Only five lemons decayed during these tests and these were all at 70 deg. F.-high humidity. Four of the five decayed fruit were found in non-perforated packages and the other in a perforated-polyethylene overwrapped package.

**Limes:** The data covering the four lime tests are summarized in Table IV.

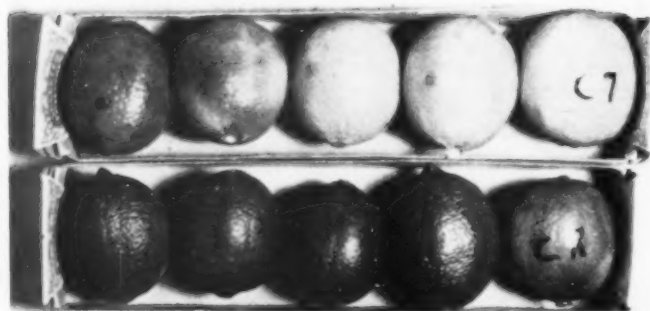
Less than 1% weight loss was found in the limes overwrapped with polyethylene. Weight loss was slightly greater in the unwrapped than in overwrapped limes held at 46 deg. F. The difference was greater at 70 deg.-high humidity and even greater at 70 deg.-low humidity.

All limes were fresh and firm at seven days except for the unwrapped fruit held at 70 deg. F.-low humidity, which was soft and slightly wilted.

The carbon-dioxide content of the package atmosphere ranged from 0 to 3.4% and the oxygen content from 10 to 20%. No off-flavors or internal physiological breakdown was noted.

No decay was found in limes held at 46 deg. F. during the test. A slight amount of decay was found in three days at 70 deg.-low humidity. At seven days commercially important amounts were found in both 70 deg. rooms with an average of 7.5% in the non-perforated lots, 5% in the perforated lots and 1.7% in the naked lots.

No yellowing was found at 46 deg. F. and none was found after three



3. YELLOWING OF LIMES in unwrapped packages held seven days at 70 deg. F. Upper package held in room containing decayed fruit from other tests; lower package held in room free of decaying fruit.

days at 70 deg. After seven days at 70 deg.-high humidity 5%, 13.4% and 14.2% yellowed limes, respectively, were found in the non-perforated, perforated and unwrapped packages, while 2.5%, 3.3% and 5%, respectively, were found at 70 deg.-low humidity.

The difference in yellowing in the two 70 deg. F. rooms may have been due to ethylene given off by decaying

fruit from other tests in the 70 deg. and high-humidity room (see Fig. 3). That ethylene and possibly other de-greening agents from outside the packages caused the yellowing is indicated by the fact that the non-perforated packages had the fewest yellowed limes, perforated packages had the next greater percentage and the unwrapped packages had the

most. The smaller amount of yellowing in the non-perforated packages, although due in part to protection from exposure to ethylene, may also have been due to the slowing down of physiological activity of the limes as a result of carbon-dioxide build-up and oxygen depletion in the package atmosphere.

## Discussion

These tests re-affirm the well-known value of low temperature in prolonging the shelf life of various citrus fruits whether wrapped in film or held in open containers.

At 46 deg. F.-high humidity, decay was well controlled, green color in limes was maintained, weight loss even in unwrapped lots was reduced to a minimum and fresh appearance was maintained in all lots. Weight loss even at high temperature and low relative humidity was reduced by using either perforated or non-perforated polyethylene film. Reducing the weight loss with polyethylene also maintained the fresh turgid appearance and prevented shriveling and

TABLE III—WEIGHT LOSS AND DECAY IN CALIFORNIA LEMONS PACKAGED IN TRAYS, LEFT UNWRAPPED, OR OVERWRAPPED WITH PERFORATED OR NON-PERFORATED POLYETHYLENE FILM, HELD AT 46 DEG. F. AND HIGH HUMIDITY OR 70 DEG. AND HIGH OR LOW HUMIDITY FOR THREE AND SEVEN DAYS

(Each value for Corona County is based on fruit in 11 to 19 replicate packages; each value for Ventura County is based on fruit in 17 to 21 replicate packages)

Growing area and overwrap type	Weight loss at:						Decay at:					
	46°-high humidity		70°-high humidity		70°-low humidity		46°-high humidity		70°-high humidity		70°-low humidity	
	3 days	7 days	3 days	7 days	3 days	7 days	3 days	7 days	3 days	7 days	3 days	7 days
Corona County												
Non-perforated polyethylene	0	0.1%	0.1%	0.2%	0.3%	0.8%	0	0	0	1.2%	0	0
Perforated polyethylene	0.1%	0.2%	0.4%	0.8%	0.6%	1.6%	0	0	0	1.0%	0	0
Unwrapped	0.6%	1.9%	2.1%	3.9%	5.1%	11.2%	0	0	0	0	0	0
Ventura County												
Non-perforated polyethylene	0.1%	0.2%	0.1%	0.4%	0.4%	0.8%	0	0	0	4.7%	0	0
Perforated polyethylene	0.2%	0.2%	0.2%	0.6%	0.6%	1.4%	0	0	0	0	0	0
Unwrapped	0.4%	1.2%	0.7%	1.8%	4.2%	7.3%	0	0	0	0	0	0

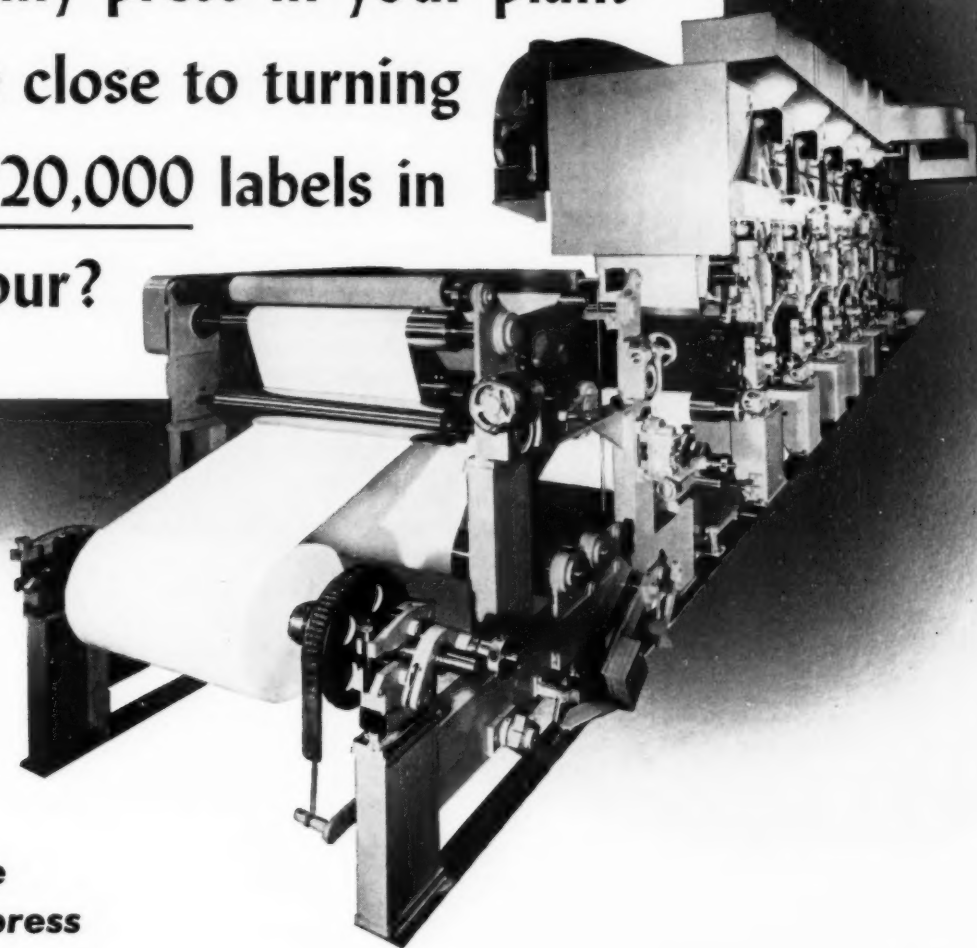
TABLE IV—WEIGHT LOSS AND DECAY IN FLORIDA LIMES PACKAGED IN TRAYS, LEFT UNWRAPPED OR OVERWRAPPED WITH PERFORATED OR NON-PERFORATED POLYETHYLENE FILM, HELD AT 46 DEG. F. AND HIGH HUMIDITY OR 70 DEG. AND HIGH OR LOW HUMIDITY FOR THREE AND SEVEN DAYS

(Each value is based on fruit in 24 replicate packages)

Overwrap type	Weight loss at:						Decay at:					
	46°-high humidity		70°-high humidity		70°-low humidity		46°-high humidity		70°-high humidity		70°-low humidity	
	3 days	7 days	3 days	7 days	3 days	7 days	3 days	7 days	3 days	7 days	3 days	7 days
Non-perforated polyethylene	0	0	0.1%	0.3%	0.1%	0.4%	0	0	0	6.6%	0.8%	8.3%
Perforated polyethylene	0	0.1%	0.2%	0.5%	0.2%	0.7%	0	0	0	8.3%	0	1.6%
Unwrapped	0.6%	1.4%	1.1%	3.3%	3.1%	6.7%	0	0	0	2.5%	0.8%	0.8%



Can any press in your plant  
come close to turning  
out 720,000 labels in  
an hour?



**That's the  
average  
production  
on one  
ATF-Klingrose  
rotogravure press**

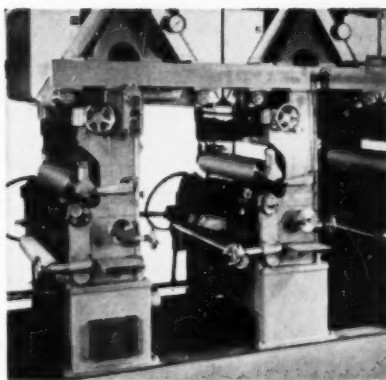
● But great speed is only part of the story. This particular press is running four colors, one of them a clear gold lacquer. Each color is bone dry before the next is overlaid. Stock is foil, laminated to paper.

Five miles of web pass through the press every hour. The sheets of 4 1/4" x 3" labels are edge-trimmed and sheeted to absolute register, then pile-cut under the guillotine. You've seen them time and again on bottles containing a nationally known beverage.

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# Questions & Answers

*This consultation service on packaging subjects is at your command. Simply address your questions to Technical Editor, Modern Packaging, 575 Madison Ave., New York 22, N. Y. Your name or other identification will not appear with any published answer.*

## **WVT at minus 20 deg. F.**

**QUESTION:** *One of our products is held at minus 20 deg. F. for considerable periods of time. We would like to be sure that moisture loss is kept to a minimum and that there is no surface dehydration or freezer burn. We have never seen any published data on water-vapor transmissions at this temperature and would like to know if there is any means of making this test or any other way we could evaluate packaging materials for this particular storage condition.*

**ANSWER:** Storage conditions of minus 20 deg. F. are lower than are encountered in commercial practice today. The amount of moisture loss at any temperature—whether normal room temperature, 0 deg. F. for frozen food or minus 20 deg. F.—will depend upon the water-vapor permeability of the package material, the package construction and the humidity of the storage atmosphere. If a means could be devised of maintaining the atmosphere surrounding the package at 100% relative humidity, then there would be no moisture loss from the unwrapped product. However, in most refrigerated storage the freezer coils operate so as to dehydrate the atmosphere to a degree, depending upon their surface temperature in relation to the temperature of the atmosphere.

There is considerable published data on the water-vapor permeability of materials at frozen-food conditions of 0 deg. F. and it is suggested that you use this data to compare this function of your materials at minus 20 deg. F., because such an estimation should not introduce any serious errors. If your laboratory wishes to make these tests themselves, the Technical Assn. of the Pulp & Paper Industry has issued a tentative standard test method for "Water Vapor Permeability of Sheet Materials at 0 deg. F.—T482m-52." This method has been

shown to give good results, but it will require special techniques and equipment to make such tests. These same techniques and apparatus could be used to make tests at minus 20 deg. F., but since the water-vapor pressure at this temperature is appreciably lower than at zero, the time of test would have to be greatly extended to get accurate results.

## **Label adhesion to foil wrap**

**QUESTION:** *We are using some special labels applied to a foil-overwrapped carton and have been having difficulty with some labels falling off on the store shelves and in shipping. The label is light-weight paper with a varnish coating and we are hand applying them with an emulsion-type adhesive.*

*What could we do in order to insure 100% adhesion of this type of label to a printed foil wrapper?*

**ANSWER:** Apparently some of the labels are adhering satisfactorily. This would indicate that your resin-emulsion adhesive is capable of making a satisfactory bond between the paper and the foil. The variability of adhesion can be due to the fact that you are applying excess water between the metal surface and the varnish on the label. If your applicator applies an excessive amount of adhesive there is not sufficient absorbercy in the light-weight paper to take care of the extra water and the label would probably fall off in the packing case or in later handling.

The first step to take is to use one of the many small adhesive applicators and apply a minimum and uniform amount of adhesive. You should also consider using a heavier paper, which will help compensate for variations in the amount of adhesive applied. Another answer would be to use a label which is thermoplastic coated on the

back, since such a label can be quickly and firmly applied to foil by heat sealing and there is little danger of its coming off in later handling.

## **Pinholes in coated papers**

**QUESTION:** *We are using a resin-emulsion-coated paper as a liner for a product that has a high grease content. The liner is well folded and sealed, but sometimes there are small stains on the flat sides of the liner. We would like to improve our liner by defining, measuring and specifying the number of pinholes per square yard.*

*Can you suggest a suitable test method for detecting pinholes in a resin-coated paper?*

**ANSWER:** The best method in general use is a tentative standard issued by The Technical Assn. of the Pulp & Paper Industry (TAPPI), entitled, "Pinholes in Glassine and Greaseproof Papers—T485M-53." The test was developed as a quick test for glassine-type papers, but it will work equally well for plastic-coated papers or for plastic films.

You must keep in mind that the test is only for pinholes which are defined as openings large enough to permit the reagent to pass through in 60 sec. or less. Do not use the test to measure greaseproofness or extend the time of contact to more than the 60-sec. limit. The easiest reagent to prepare and use is colored turpentine.

After you have tested a number of samples and correlated the pinhole count with your packaged-product tests, then you will be able to write a specification for an improved liner. However, do not expect to obtain pinhole-free coatings of emulsion-applied resins on a paper base unless you are prepared to pay for very heavy coating weights.

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President, The P. J. Ritter Company



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"Cel-O-Seal" cellulose bands are also sold by Armstrong Cork Co., Lancaster, Pa., and on the West Coast by I. F. Schnier Co., San Francisco, Calif.

**DU PONT  
CEL-O-SEAL BANDS**

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REG. U. S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING  
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# Equipment and materials

**APPLICATION OF TEAR TAPES TO LARGE PACKAGES** has been made possible by a new cross-tape unit developed by the Package Machinery Co., East Longmeadow P. O., Springfield, Mass., for its FA adjustable wrapping machines. The unit is said to locate cellophane tape accurately at the end of the



package or in any desired location in relation to its length. The tape, available in various colors, can be  $\frac{3}{32}$  or  $\frac{1}{4}$  in. wide and is applied to the roll-fed wrapper before it is cut off. The tape goes around the entire girth of the package and can be made to project any distance beyond the lap of the cellophane, making it easy to grasp hold of, to tear off. Incorporation of the cross-tape unit in no way affects the wide range of sizes accommodated by the FA machine. The advantage claimed for placing the tape at the end of the package is that it cuts off the end of the wrap neatly, leaving the main portion of the wrapper intact. A tray or carton of biscuits, for example, can be slipped out of the wrap and reinserted after a quantity of its contents has been removed. When no carton is used, as for products like the paper napkins illustrated, the opened wrap serves as a handy container.

**A NEW TABLET AND CAPSULE COUNTING MACHINE** announced by the J. R. Keeney Co., 125 Cambridge Dr., Louisville, Ky., is designed to provide the pharmaceutical industry with a simple, inexpensive unit for accurate counting of a wide range of pellets with little change-over. This semi-automatic unit, known as the Salser Tablet and Capsule Counter, is reported to be extremely versatile, handling a variety of



different-sized tablets (coated or uncoated) or capsules (gelatine, two-piece, round or oval), with change-over by a simple adjustment of two knobs. Varying count from one to 100 can be obtained. The product is untouched by the operator and the machine has full visual operation from hopper to container. Two models are available. The Standard Model illustrated is for firms packaging only one size of tablet or capsule. The Combination Model handles a wide range of tablets and capsules, is equipped with adjustable stainless steel ribs and can be adjusted in a matter of seconds, according to the company. The supplier reports that on a single-pass count between 20 and 30 containers per minute can be filled, depending upon size of product and size and shape of container. Multiple counts are slightly below this figure. A third machine is being developed that will count and load a thousand-count bottle with one motion, but its use will be limited to smaller-sized tablets such as saccharine.

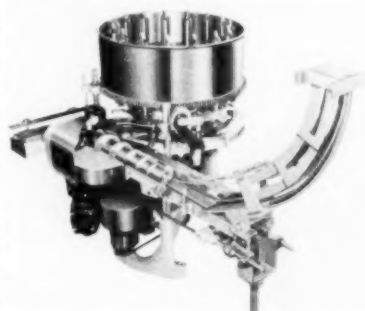
## A NEW HEAT SEALER FOR PLASTICS

has been developed by Pack-Rite Machines, Division of Techt-mann Industries, 407 E. Michigan St., Milwaukee 1, Wis., especially for sealing polyethylene, Pliofilm and other plastic bag materials at high speed for volume production. Film of  $1\frac{1}{2}$ -mil thickness is reported to be sealed at speeds up to 600 in. per minute, 2-mil thickness between 400 and 500 in. per minute and 3- to 4-mil thickness between 200 and 300 in. per minute. Bags inserted in the feed wing of the machine, called the Model 4

Plasti-Sealer, are gripped at the tops between two endless fabric rubber belts and conveyed through rolls where the seal is made. The plastic film is melted at point of roll contact, resulting in a welded seal about  $\frac{1}{8}$ -in. wide. Double sealing rolls for making two seals about  $\frac{1}{2}$  in. apart can be furnished at a slight additional cost. Temperature of sealing roll is automatically controlled by a bulb-type thermostat, with dial for setting located on front of the machine. The unit is available for bench or table mounting or on an adjustable-height floor base.

## A NEW 15-VALVE FILLING MACHINE

introduced by the Canning Machinery Div. of Food Machinery & Chemical Corp., P. O. Box 760, San Jose 6, Calif., is reported to offer extreme accuracy, uniform fill and high operating speeds in filling a wide range of liquids such as brines, syrups, juices, anti-freeze and light oils. This new FMC 15 Valve Fil-



Mor Filler operates at speeds ranging from 125 to 150 CPM with #404 x 700 cans to 300-325 CPM with #202 x 314 cans. The machine operates on a new "Fil-Mor principle" which employs an inner tank within the standard filling bowl. The space created between the walls of the inner tank and the standard bowl provides the measuring-tube filling section of the filler. The inner tank serves as the supply receptacle for receiving fresh liquid and also functions as a dam for the overflow of liquid from the filler bowl. The valves are located beneath the measuring tubes in the filling section. The valve is made up of only three components: a movable piston, a stationary valve body and a measuring tube, and can easily be dismantled for cleaning, the company reports. Other features of the filler include a bankable can track to prevent spilling of the liquid by centrifugal force at high speed and a "no can-no fill" device as standard equipment. All contact parts are of stainless steel and copper-free nickel alloys. The compact unit measures 43 in. long, 85 in. wide and 57 in. high to can chute and 50 in. maximum bowl height.

## A NEW PRESSURE-SENSITIVE TAPE DISPENSER

that is fully automatic and electrically operated has been announced by Penn Tape Savers, Luzerne at D St., Philadelphia 24, Pa. The new machine automatically feeds, cuts and dispenses pre-determined lengths of any type of pressure-sensitive tape. Speed can be as high as 3 in. of tape per second, or almost any intermediate speed chosen. To use, the machine is



simply set to dispense tape for length required and speed of dispensing. The standard machine dispenses  $\frac{1}{2}$ - to 3-in.-wide tape in lengths from  $\frac{1}{8}$  to



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General Aniline & Film Corporation  
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Walter Baker Chocolate & Cocoa Div.  
General Foods Corporation  
The Barbasol Company  
The Bayer Company Division of  
Sterling Drug Inc.  
Bernardin Bottle Cap Co., Inc.  
The Best Foods, Inc.  
Block Drug Company  
Brillo Manufacturing Company, Inc.  
Bristol-Myers Company  
The Bunting Chemical Company  
Joseph H. Burnett Division  
American Home Foods, Inc.  
The Centaur-Caldwell Division of  
Sterling Drug Inc.  
Campana Corporation  
The Carter's Ink Company  
Chamberlain Sales Corporation  
Chesebrough Manufacturing Co.  
Colgate-Palmolive-Peet Company  
Commercial Solvents Corporation  
Conrad Razor Blade Co., Inc.  
Corega Chemical Company  
Crescent Mfg. Co.  
E. C. De Witt & Co., Inc.

E. I. Du Pont de Nemours & Co., Inc.  
Eastman Kodak Company  
Esso Standard Oil Company  
Ex-Lax, Inc.  
Frank H. Flee Corporation  
C. B. Fleet Co., Inc.  
Foster-Milburn Company  
The R. T. French Company  
Gillette Safety Razor Company  
H. Clay Glover Co., Inc.  
Griffin Manufacturing Co., Inc.  
The Grove Laboratories, Inc.  
Henry Heide Incorporated  
George W. Helme Company, Inc.  
The Charles E. Hires Co.  
Hollywood-Stars, Inc.  
H. R. Laboratories, Inc.  
Hudson Pulp & Paper Corp.  
Iodent Chemical Company, Inc.  
Johnson & Johnson  
Kerr's Butter Scotch, Inc.  
The Kilgore Manufacturing Co.  
Kimberly-Clark Corporation  
Knemark Manufacturing Co., Inc.  
Lambert Pharmacal Company  
The Laveris Company  
Lederle Laboratories Division  
American Cyanamid Co.  
Lever Brothers Company  
Lewis-Howe Company  
Eli Lilly & Company  
P. Lorillard Company, Incorporated  
Manhattan Soap Company, Inc.

The B. Manischewitz Company  
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McKesson & Robbins Incorporated  
Mead Johnson & Co.  
Menley & James, Limited  
The Mennen Company  
The Mentholatum Company, Inc.  
Merck & Company, Inc.  
Wm. S. Merrell Co.  
Miles Laboratories, Inc.  
The John Mueller Licorice Company  
The Musterole Company  
National Biscuit Company  
National Toilet Company  
The Nestle-Lemur Company  
Newskin Company  
New England Confectionary Co.  
Northam Warren Corporation  
The Norwich Pharmacal Company  
O-Cedar Corporation  
Old Dutch Industrial Prod. Co., Inc.  
Pal Blade Co., Inc.  
Parke, Davis & Company  
Patagonset Finishing Co., Inc.  
Pepsodent, Division of  
Lever Brothers Company  
Perfection Stove Company  
Personal Products Corp.  
The Pharma-Craft Corporation  
Plough, Inc.  
J. L. Prescott Co.  
Praxter & Gamble Co.

Q-Tips, Inc.  
The Quaker Oats Company  
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Feed and open cartons; insert single or multiple loads; glue or tuck flaps of cartons — airplane or reverse tuck. Fold and insert leaflets, booklets, corrugated liners; print or stencil code; are convertible to different sizes of cartons and loads.

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## Equipment and materials

18 in. Shorter or longer lengths are possible by use of a slightly changed special machine. Pre-cut lengths of tape are conveyed to operators by a 15-in. moving conveyor built on the machine. One or more operators can remove tape from conveyor at any point on the conveyor. A slitting attachment can be made an integral part of the dispenser. The unit is reported to be sturdy, light weight, portable and economical. Over-all length of the machine, including conveyor, is 35 in. Width and height are 12 in. Weight is about 35 lbs.

### A NEW FILM-BAG CLOSURE

designed to speed up pre-packaging operations in the food field and other industries has been developed by Paxton Machines, Inc., Riverdale, Calif. Called "Kwik Loks," the closure is a durable plastic tab which can be quickly snapped on by hand or by use of the "Paxco" Bag Closer. The bag closer holds a full magazine of Kwik Loks and feeds them out as fast as required by the operator. The manufacturer reports that the new closures can be affixed at the rate of 1,800 to 2,000 per hour. The operator merely twists the top of the bag as usual, then snaps it into the Kwik Loks tag. Efficiency of the Paxco bag-closing machine is said



to save as much as \$1 per thousand bags. Feature of the new closure is that it can be readily unsnapped, in case a damaged item needs to be replaced in the bag, and then snapped back on just as quickly. The closures are made in several sizes. One is a small plain tag for pricing. Larger ones are imprinted with trade name and other information, and can be used as the package label for unprinted film bags.

### A NEW STIFFNESS TESTER

for determining both initial and basic stiffness of sheet and wire specimens is available from the Taber Instrument Corp., 111 Goundry St., North Tonawanda, N. Y. The new 1954 Taber

Model 150 Stiffness Tester is said to be more sensitive than previous models, having eight test ranges instead of six. Flexural rigidity of very thin materials such as cellophane and foil can be determined with the SR150-14 attachment which magnifies dial readings 100 times. Test length, angle of deflection and rate of loading are all standardized for accurate test results among different laboratories. Readings are taken direct from dial, making charts, tables and lengthy calculations unnecessary. A triple-cut shear blanks out precision specimens up to 20-pt. thickness, eliminating variations in results caused by using specimens of different sizes. The



# packaging news...



by **HARCORD**



"A steady increase in sales", reports Yardley about its brown and buff paper package of Lavendomeal bath salts. We at Harcord like to feel that personal attention is responsible for our six years of service to Yardley.



The trade has already called Revlon's Fire and Ice promotion the most sensational in cosmetic history. This fine product made its bow in a provocative black and red paper canister. We take pride in producing the competitively priced packaging behind this amazing success story.



Attention-getting packaging is often the result of minute attention to details. Nestle-LeMur, another user of Harcord paper canisters, constantly gains wider distribution for its Blue Waltz Dusting Powder with its smartly designed package.



Since the introduction of the Du Barry Cologne Duo by Richard Hudnut more and more women have enjoyed receiving this delightful gift. We think that's a fine testimonial to a good product—well packaged by Harcord.

**HARCORD MANUFACTURING CO., INC., PAPER CANISTERS**  
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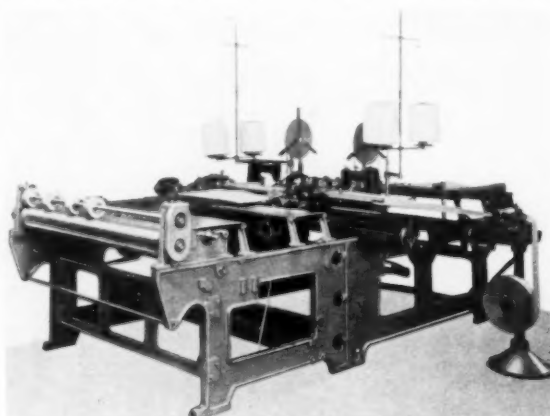
PAPER MACHINERY & RESEARCH • INC  
1014 OAK STREET • ROSELLE, NEW JERSEY

## Equipment and materials

mechanism of the unit is sealed against foreign particles and is reported to be unusually rugged. All exposed parts are aluminum and stainless steel.

### A NEW MULTIWALL-BAG SEWING MACHINE

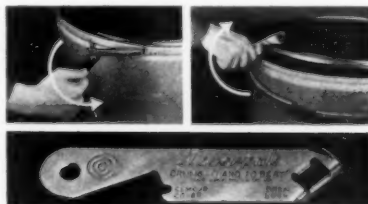
that sews one or both ends of a multiwall bag and produces a siftproof seal by applying selvage tape over the sewing has been announced by the Potdevin Machine Co., 285 North St., Teterboro, N. J. This single or double-end tape-over sewing machine



first sews the ends of the tube, then the selvage is glued and applied over the stitches. The resulting siftproof seal is reported by the manufacturer to be ideal for multiwall bags used for packaging sugar, flour, cement, fertilizer, feed, insecticides and other fine materials. This new Model S-3 machine sews multiwall bags ranging in size from 10 by 20 in. to 26 by 54 in. at a rate of 30 to 40 bags per minute and is designed for use with the Potdevin Multi-Wall Tuber. The unit occupies a floor space of 4 by 9 ft. and is 36 in. high.

### A NEW OPENING AND CLOSING TOOL

is being offered by the Continental Can Co., Inc., 100 E. 42 St., New York 17, to its customers using Leverpak fibre drums for shipment and storage of dry bulk products. Designed to make opening and closing of the Leverpak drum quick and easy, the tool is supplied by the can company in quantity without charge to buyers and users of Leverpaks. The tool, illustrated herewith, is also shown disengaging the lock and lifting the metal lid from a container after the lever-lock has been disengaged by use of the tool. The tool can be used on any Leverpak, the company reports, from the 12-gal. to the 75-gal. sizes.



### AN AUTOMATIC INDEXER

that is reported to provide speedier electronic heat sealing of plastics has been developed by the Thermatron Div., Radio Receptor Co., Inc., 251 W. 19 St., New York 11. This is an auxiliary machine which can be combined with any Thermatron press and generator to make a complete unit for automatically feeding, sealing, indexing and winding up or discharging full





## CONVENIENT WIRZ APPLICATOR TUBES PROTECT AGAINST CONTAMINATION

Custom-made WIRZ tubes assure safe, economical and easy application of these leading lubricants for industrial and home use. Specially designed to prevent leakage and contamination, these grease tip tubes by WIRZ are furnished with tight fitting, non-breakable polyethylene caps. Available in a wide range of tube sizes, and tip and cap designs, WIRZ collapsible metal tubes will give added sales appeal to your product. To discuss your packaging problem with our experienced engineers and designers simply call your nearest WIRZ representative, or write us direct.



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Collapsible Metal Tubes • Lacquer Linings • Wax Linings • Westite Closures • Soft Metal Tubing • Household Can Spouts • Applicator Pipes • Compression-Injection Molding

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Choice of 8 extra-bright colors: blue, cerise, chartreuse, red, orange-yellow, orange-red, green and orange. All colors stable in storage, remain effective for months of interior exposure. Your design easily printed by letterpress, offset, silk screen or gravure. Order NOW from your printer, paper dealer or write us for printed samples and color card.

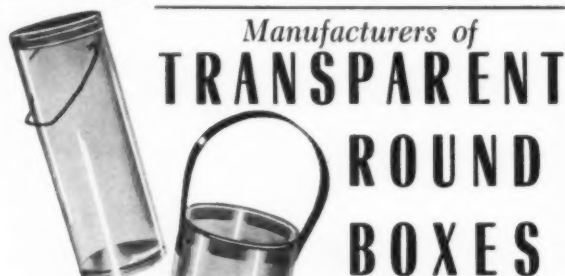
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53

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**TRANSPARENT  
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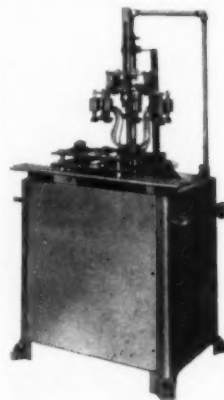
476 Broome St., N. Y., N. Y.

## Equipment and materials

rolls of vinyl sheet. The supplier reports that the unit can be quickly and easily attached to presses and generators in use.

### AN AUTOMATIC NITROGEN-DEPOSITING MACHINE

that enables complete displacement of trapped air in filled containers to eliminate a contamination problem has been announced by the MRM Co., Inc., 191 Berry St., Brooklyn 11. The need for such a machine, according to the manufacturer, is particularly great for firms filling food or drug products that are subject to contamination created by the air trapped in air pockets; limited shelf life often caused losses due to product spoilage. With this new nitrogen-depositing machine, a stainless steel nozzle fits over the mouth of the container and emits a stream of nitrogen gas downward, forcing out trapped container air through a separate opening. The machine is designed to keep loss of nitrogen gas to an absolute minimum, the maker states. Nitrogen pressure is controllable and shuts off automatically when the machine is stopped. The unit is said to fit into any production line, can be quickly changed over for container size and handles sizes from a fraction of an ounce to gallons.



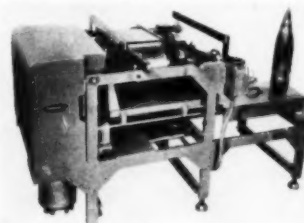
### A NEW SARDINE CAN

reported to be an improvement over the Norwegian-developed container of similar type has been announced by the American Can Co., 10 E. 40 St., New York 16. The new easy-opening container is a No. 4 oblong, sanitary-style sardine can featuring a slotted key that fits into a lip on the can top. The can has a drawn body with a double-seamed top. It replaces the former punch-and-roll opening can and supplements the can company's standard sardine container. The new can, being produced at Canco's Lubec and Portland, Me., factories, is said to be the first of the sanitary-type sardine cans manufactured in the U. S.



### A NEW AUTOMATIC MARKING MACHINE

for imprinting of cans, containers and similar objects of cylindrical nature, particularly where weight is a problem, is scheduled for production by the Markem Machine Co., Keene 40, N. H., following satisfactory performance in the field, according to the company. The machine can become a part of the production line and automatically receive, print and eject the objects being marked, or it can be manually fed.



The complete inking and printing mechanism can slide out from the side of the machine for easy access when built into a conveyor or production line. Object capacity ranges from 3 to 10

**MODERN PACKAGING**

# BARTELT

## "Machinery for Creative Packaging"

### Die-Cut Web

the Bartelt Machine  
will die-cut a web,  
make a bag, fill, fold  
and seal!



### Liquid Fill

the Bartelt Machine  
can package liquids.  
Special feature...can  
be steam cleaned!



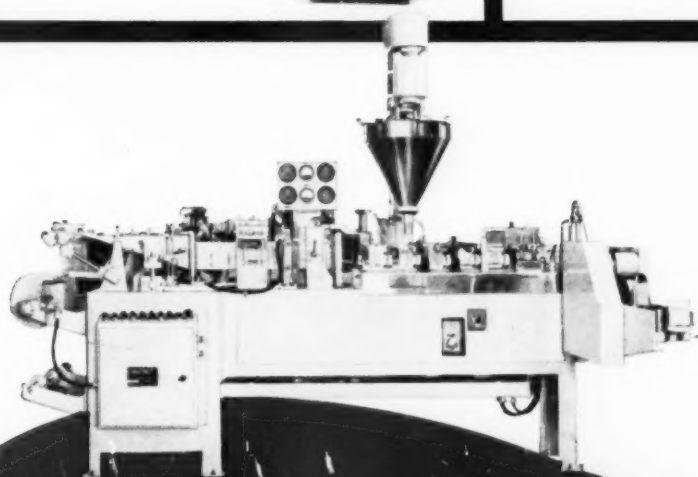
### Stand-up Pouch

the Bartelt Machine  
will make a flat-bot-  
tom stand-up pack-  
age for liquids!



### Custom Made

the Bartelt Machine  
will make a multi-  
wall bag and fill it!



**BARTELT ENGINEERING CO.**

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ROCKFORD, ILLINOIS

EQUIPPED WITH WARNER  
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Colorful, individual pack-  
ages which effectively  
display your product can be  
made automatically and  
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Packaging Machines. Bartelt  
Packagers make the bag  
from a roll of paper, film, or  
foil; fill by count, volume, or  
special feeder; and heat seal  
accurately and safely. If you  
can use a pouch style, heat-  
sealed package, our machi-  
nes may be adapted to your  
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## FOLDS-SEALS

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**CUTS LABOR COSTS!** Label Seal-It takes the hand-work out of packaging... eliminates pins and stapling. *One operator does the work of two!* These savings alone actually pay for Label Seal-It in a few short months. Cuts label expense too... uses ordinary printer's enamel stock instead of special thermoplastic coated papers. Seals all heat sealable bag materials—Cellophane Polyethylene, Pliofilm, etc.

**NEWLY IMPROVED**—now equipped with latest type vacuum pickup which insures individual label feeding! Built-in cam driven pump—no extra vacuum equipment to buy.

Let us prove Label Seal-It is your best buy!  
Full line of Heat Seal-It machines available.

★ **GLOBE** ★  
**HEAT-SEAL, INC.**  
HEAT SEAL-IT DIVISION

Write for Circular

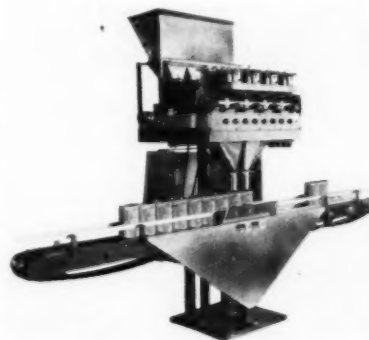
3380 SOUTH ROBERTSON BLVD., LOS ANGELES 34, CALIFORNIA

## Equipment and materials

in. in diameter, 5 to 100 lbs. in weight. Imprint can be up to 9 by 9 in. on the standard unit, although larger areas are available where required. Printing legend is easily changed, including variables. The reservoir inking mechanism is quickly cleaned, adjusted or colors changed, the manufacturer reports. Inks in colors and for a variety of finishes or materials are available.

### A NEW VIBRATORY FEEDER

developed by the Weigh Right Automatic Scale Co., Joliet, Ill., combines a narrow dribble deck with a wide bulk deck on a single base, providing what is reported to be a new concept of bulk and dribble net weighing. On a single-base vibration, transfer is eliminated by a solenoid trip lever permitting individual operation of the machine at different output rheostat-controlled speeds. Beam-limit switches actuate the feeder for fast bulk and dribble weight pick-up; the finish fill dribbles from the narrow vibrator deck section. Normally, narrowing a dribble deck vibrator causes bridging from the hopper, but with this new "Twinflo" machine a full-width hopper source minimizes such bridging and single-file dribble feed is possible right alongside the bulk flow. The weigher will not discharge until up to weight. The new feeder is illustrated here in use at Judson Dunaway Corp. for filling paradichlorobenzene tablets and crystals.



### PRICE REDUCTIONS FOR PHENOLIC MATERIALS

have been announced by Bakelite Co., a Division of Union Carbide & Carbon Corp. Most standard phenolic molding materials are reduced 1 cent per pound; most unmodified phenolic resins are reduced 2 cents per pound; resin solutions are reduced according to the varying solids content. For example, a 50% solids-content solution is reduced ½ cent a pound, while a 75% solids solution is lowered 1½ cents.

### A NEW HAND DISPENSER

designed for use with "Scotch" brand tear-resistant filament tape and other hard-to-cut pressure-sensitive tapes has been announced by the Minnesota Mining & Mfg. Co., 900 Fauquier St., St. Paul 6, Minn. This new Model H-120 dispenser, an all-metal unit, has a



fixed saw-tooth cutting edge that permits the tape to be cut with a simple twist. The new cutting edge is said to last three times longer than the trigger-operated razor used on earlier dispensers. Smaller, stronger and more

compact than former models, the unit is made for use with 60-yd. rolls of filament tape from ½ to 1 in. in width.

MODERN PACKAGING



# Give the **Bag Buster** vegetables all the advantages of prepackaging

## *Celanese*<sup>\*</sup> POLYETHYLENE

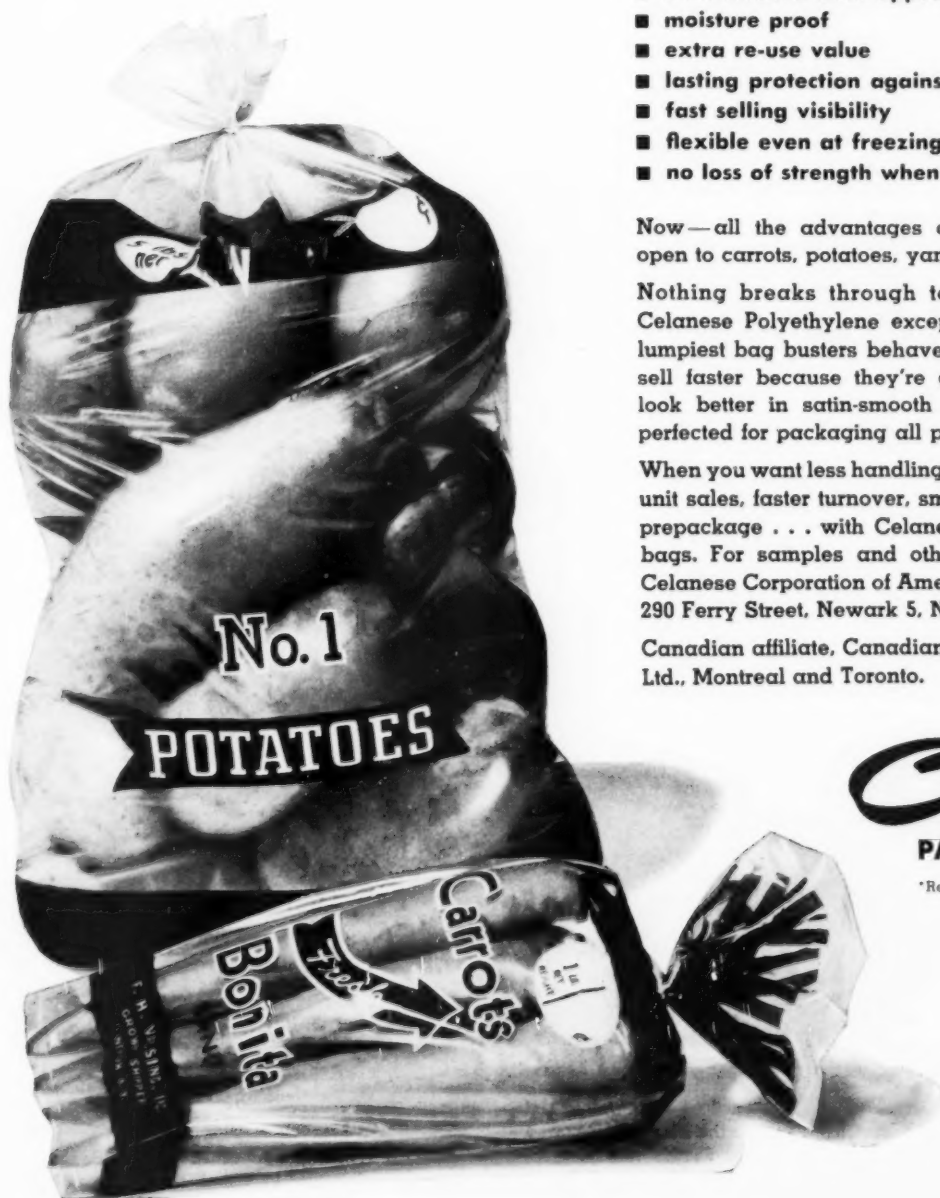
- tough, tear-resistant
- satin-smooth sales appeal
- moisture proof
- extra re-use value
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- fast selling visibility
- flexible even at freezing
- no loss of strength when wet

Now—all the advantages of prepackaging are open to carrots, potatoes, yams, beets, onions.

Nothing breaks through tough, tear-resistant Celanese Polyethylene except sales appeal. The lumpiest bag busters behave themselves . . . and sell faster because they're cleaner, fresher, and look better in satin-smooth polyethylene — now perfected for packaging all produce.

When you want less handling, less spoilage, bigger unit sales, faster turnover, smoother store traffic — prepackage . . . with Celanese Polyethylene film bags. For samples and other information, write Celanese Corporation of America, Film Dept. 108-B, 290 Ferry Street, Newark 5, New Jersey.

Canadian affiliate, Canadian Chemical Company, Ltd., Montreal and Toronto.



*Celanese*<sup>®</sup>  
**PACKAGING FILMS**

\*Reg. U.S. Pat. Off.

# Plants and people



Mr. Thies

**Herman R. Thies** has been promoted to the newly created position of general manager of all chemical products for the **Goodyear Tire & Rubber Co.**, Akron, Ohio. With Goodyear since 1930, Mr. Thies is the author of numerous technical articles and has been assigned a number of patents. He is known for his development of Pliolite "NR," used in the paint, printing ink, paper coating and allied industries.

**Frank Biederman** has retired as sales manager of **Kimberly-Clark Corp.**, Neenah, Wis., after 28 years of service with the company. Starting in 1925 with the assignment of advertising, selling and promoting the Kimberly-Clark product known then as Cellupacking, Mr. Biederman became manager of Cellupacking sales, advertising and promotion. Concurrently, Mr. Biederman promoted cellulose neckstrips. These products are known today as Kimpak and Sanek. He conducted many investigations on new uses for cellulose-wadding products and many product ideas were originated or affected by his influence.



Mr.

**Biederman**

**The Harmon Co.** of New York, manufacturer of plastic molding and stock plastic boxes, has moved its executive offices to 331 Madison Ave., New York 17.

**N. H. Collisson** and **M. F. Meissner** have been appointed vice presidents for operations of **Olin Industries, Inc.**, East Alton, Ill., to assist **F. S. Elfred**, executive vice president, in the administration of the company's various divisions. Mr. Collisson will administer the Film, Paper, Forest Products and Electrical Divisions. Mr. Meissner will administer the Arms & Ammunition, Explosives, Ramset and Metals Divisions, and serve as general manager of the Metals Div.

**Milton L. Herzog** has been made general manager of Olin's Film Div. and **C. E. Silk** has been named general manager of the company's new International Div., which has absorbed the responsibilities of the former export division. **O. E. Nelson** continues in charge of the division's export sales.

**Owens-Illinois Glass Co.**, Toledo, Ohio, plans to construct a new glass-melting furnace, a new warehouse and other ad-

ditions at its Bridgeton, N. J., glass-container plant. The new furnace, bringing Bridgeton's total to eight, is expected to be completed late this year. The new warehouse will accommodate about 30,000,000 glass containers.

**Hinde & Dauch Paper Co.**, Sandusky, Ohio, has acquired a 17-acre site at Kansas City for the construction of a new factory to manufacture corrugated and solid fibre shipping boxes.

**Hinde & Dauch Paper Co. of Canada, Ltd.**, has purchased all outstanding stock of **Martin-Hewitt Containers, Ltd.**, Peterborough, Ont. The Martin-Hewitt factory will be operated as a wholly owned subsidiary of Hinde & Dauch, with no expected change in management or personnel. **Herbert Martin** will continue as president of Martin-Hewitt. Hinde & Dauch of Canada has started construction near Toronto of a modern corrugated paper shipping box factory, scheduled to be in operation by the end of the year.

**Visking Corp.**, Chicago, has named **Gustav Freund, II**, vice president and treasurer of the company, replacing **Howard Medici**, who has been made executive vice president. **Alfred G. Hewitt** has been appointed vice president and general



Mr. Freund Mr. Hewitt Mr. Houck

manager of the Clearing Div. **Leslie E. Houck** has been made general manager of Visking, Ltd., in Lindsay, Ontario. **Roland G. Maus** has been promoted to general manager of the Little Rock Div.

**Standard-Knapp, Div. Emhart Mfg. Co.**, Portland, Conn., has promoted **Leonard D. Kniffin, Jr.**, to assistant general sales manager, with headquarters at Portland. **A. L. Mix**, formerly of the Cleveland office, will be transferred to a newly organized territory comprising Southeastern Michigan and Northwestern Ohio, with headquarters in Dearborn, Mich. **S. W. Capper** has been promoted to district manager for the Atlanta area and **D. G. Kobick** has been promoted to Cleveland district manager. **D. S. MacCallum** will head the Batavia, N. Y., office, replacing **D. S. Shields** who takes over the New York City district. **Clay Willingham** has

joined Standard-Knapp's St. Louis office as sales engineer.

**The Package Machinery Co.**, East Longmeadow, Mass., has appointed **William B. Sanford, Inc.**, as sales agent for its Thrifty labeling machine, replacing the MRM Co. The Sanford firm will cover Metropolitan New York, Eastern Pennsylvania, New Jersey, Maryland, Delaware and the District of Columbia.

**Arthur Holdsworth** has joined the Providence, R. I., sales department of **Stein, Hall & Co., Inc.**, New York, and will deal in the textile, adhesive and food fields.

**The Sisalkraft Co.**, Chicago, has merged with its manufacturing division, **The American Reinforced Paper Co.** The organization will be renamed **American Sisalkraft Corp.**

**Albert H. Merz**, engraver and printer and president of the **Inta-Roto Machine Co.**, Richmond, Va., has opened a new engraving company, the **Inta-Roto Engraving Corp.** Mr. Merz will also serve as president of the new company which occupies a new building adjacent to Inta-Roto Machine Co. in Richmond. The new plant has facilities for a complete service in copper plating, engraving, chrome plating and proofing cylinders. Inta-Roto Machine has appointed **Ed A. Coudriet** as secretary and development engineer of the company.

**The Jerome Gould Corp.**, export packer, has opened new offices and an enlarged small-parts packaging plant at 1562-1572 DeKalb Ave., Brooklyn.

New officers of the **Federal Paper Board Co., Inc.**, Bogota, N.J., are: **Robert A. Wallace** and **Frederick W. Hesser**, vice presidents; **Sven E. Soderbergh**, treasurer; **Ferdinand E. Endriss**, comptroller. Mr. Wallace also continues as company secretary. Mr. Endriss will serve also as treasurer of the National Folding Box Co., a newly acquired Federal subsidiary.

**Gen. Mark W. Clark**, former U. S. and United Nations Supreme Commander in the Far East, has been elected a director of the **Lassiter Corp.**, Charlotte, N. C. Gen. Clark will have a part in the administration of six Lassiter food and textile divisions.



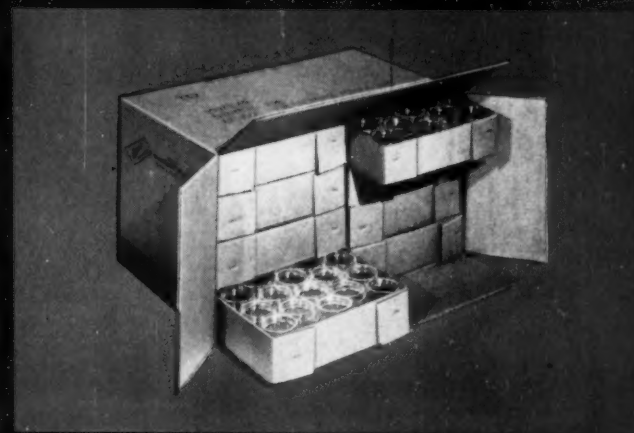
Gen. Clark

**E. I. du Pont de Nemours & Co., Inc.**, Wilmington, Del., will build a \$3,000,000 laboratory in Wilmington to expand the

# STURDY CONSTRUCTION



# ECONOMICAL SHIPPING



# POSITIVE PROTECTION

Write for free booklet,  
"How To Stack & Load  
Corrugated Shipping Boxes."  
Hinde & Dauch, Sandusky  
4, Ohio.



**HINDE & DAUCH**  
*Authority on Packaging*



# CAMEO PRES-SURE-STICK LABELS & SEALS



they stick  
on any smooth  
surface



... and they  
come up without  
leaving a trace...



embossed • printed  
all sizes and shapes  
... made by Cameo,  
crafters of fine  
labels, tags  
and seals



## Plants and people

capacity of its Polychemicals Dept. Its facilities will be several times the size of those at the Arlington, N. J., laboratory, which it will replace. Construction is expected to be completed early in 1955.

**Douglas Peacher, Richard Snideman and Malcolm K. Whyte** have been elected to the board of **Container Laboratories, Inc.**, New York.

**Harry H. Filler** has been named national container products manager in charge of all container and bulk packaging products for **Rheem Mfg. Co.**, New York. Mr. Filler will headquarter at the Rheem plant in Chicago.

**William S. Goodfellow** has been named Eastern Div. manager with headquarters in Chicago, with responsibility for all



Mr. Filler Mr. Goodfellow Mr. Makenas

Rheem manufacturing and marketing activities east of the Rockies. This includes plant activities in Chicago and Philadelphia; Linden and Burlington, N. J.; Sparrows Point, Md.; New Orleans and Houston. **Joseph P. Makenas** succeeds Mr. Goodfellow as central region manager in charge of the company's Chicago and Midwest area.

**The Cleveland Vibrator Co.**, Cleveland, Ohio, has appointed the **Industrial Vibrator & Machinery Co.**, San Francisco, as its West Coast distributor.

**W. B. Sander** has been elected president of **Extruders, Inc.**, Hawthorne, Calif. Mr. Sander replaces **W. S. Towne**, who was elected chairman of the board. **James M. Bennett** has been appointed factory representative for the company's polyethylene film and will cover the South and Texas. **Milton W. Stein** will be the company's representative in the Middle West.

**Earl E. Gray** has been elected executive vice president of **Caspers Tin Plate Co.**, Chicago. Other elected officers are: **John P. Blake**, vice president, manufacturing; **William H. Hugus**, vice president, sales; **Robert L. Singley**, vice president of **Closure Lithographing Corp.**, a wholly owned subsidiary; and **Roy Kritser**, secretary and treasurer. **William M. Leitner** has been appointed comptroller and Har-

old **W. Cochran** manager of sales. **L. K. Hitchings**, former vice president and treasurer, has retired.

**John S. Morrison** has been elected vice president in charge of sales of **National Can Corp.**, New York. Mr. Morrison will be in charge of all sales activities, coordinating sales promotion, marketing, sales training and advertising for all the company's plant locations.



Mr. Morrison

**Charles A. Johnson** has been named to a new post as assistant director of research and development for **Atlas Plywood Corp.**, Boston. Mr. Johnson will headquarter at Lawrence, Mass.

**Nico Kamp** has joined the **H. H. Heinrich Co.**, New York, as assistant sales manager. Mr. Kamp's activities will cover sales and service of flexographic printing presses and bag-making machinery sold through the Heinrich organization.

**Dr. Frederick W. Adams** has been named director of research and development for the Millsplastic Div. of **Continental Can Co.**, New York. Dr. Adams comes to Continental from the Spool Cotton Co., where he was research director and worked on



Dr. Adams (left) and Mr. Jennings

plastic molding techniques and high polymer resin technology. He will headquarter at Continental's Research Div. in Chicago. **John C. Jennings** has been named Continental's product sales manager of plastic bottles. Sales of the plastic bottles, manufactured by the Elmer E. Mills Corp., subsidiary, are handled through the Shellmar-Betner Div. of Continental. Mr. Jennings will headquarter with the Elmer E. Mills Corp., Chicago.

**Aluminum, Ltd.**, Montreal, Canada, is constructing a new fabricating plant for aluminum in Alicante, Spain. The new plant is owned by **Aluminio Iberico, S.A.**, a company controlled jointly by **Aluminum, Ltd.** of Canada, **Manufacturas Metalicas Madrilenas S.A.** of Madrid and a group of Spanish banks and individuals.

**The Hazel-Atlas Glass Co.**, Wheeling, W. Va., has consolidated the sales activity of its Kansas City, Mo., and Oklahoma City,



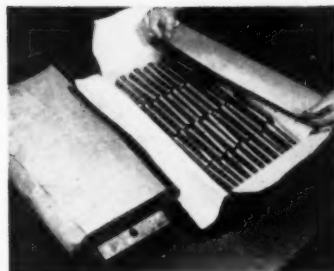
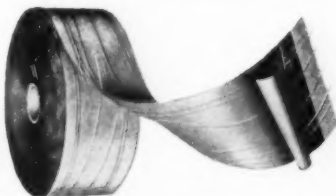
# Which of these PACKAGING IDEAS will cut *your* costs?



Center-seam sealing with Snake Tape saves time. **Free Sample!**



Protective papers for industrial, building and farm needs since 1895. Distributors in Principal Cities.



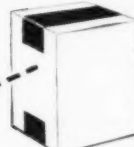
## Vapor-from-Paper STOPS RUST

Saves greasing. Saves degreasing. It's Angier's *proven* vapor rust preventative—VPI® Wrap. Easiest, *sure* way to store or ship your metal products. Check below for **FREE** sample & facts.



## A Better Way to Wrap Coils

Angier's creped spiral wraps protect coils and straight lengths from oil, rust, moisture, abrasion. You'll do the job faster on our spiral wrap machines. Check below for **FREE** sample & facts.



## Center-seam sealing with SNAKE TAPE saves time

Now reinforced Snake Tape seals the center seams of cartons at Stoeger Arms Corp. These 35 lb. cartons of books are sealed two-thirds faster than before. Yet, the closure is *stronger*, thanks to Snake Tape's strap-like strength.

Where can *you* use this strong, water-proofed tape? Choice of six widths!

Center-seam sealing is accepted for parcel post, railway express, air express, and truck shipments; it also is accepted for carload and LCL rail shipments where rule 5, section 1 (c) of Uniform Classification applies.

Check below for **FREE** sample & facts.

ANGIER CORPORATION  
Framingham 11, Massachusetts

I want information and samples of:

- ☐ Angier spiral wrapping.
- ☐ Angier VPI Wrap.
- ☐ Angier reinforced Snake Tape.

NAME  
(Sign and attach coupon to letterhead)

## SATISFACTION GUARANTEED and YOUR MONEY BACK

Faster, neater bagging . . . at lower cost . . . pays you many times the price of this easy-to-use bagger. Blower opens bag; your operator fills and removes it in one swift motion. Adjustable for bags from 2 3/4 to 5 inches wide and 5 3/4 to 7 1/2 inches high. Glad to quote for other sizes or cellophane.

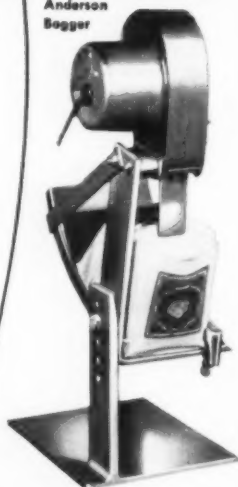
### TRIAL OFFER

Use this bagger a full week. Be 100% satisfied or return it for refund.

Just send samples of your bags and ask for Bulletin 2-29



Anderson  
Bagger



\$65 complete, f. o. b. Rockford

ANDERSON BROS. MFG. CO.  
ROCKFORD, ILLINOIS

## STRIP PACKETS IN CATCH COVERS... ... AUTOMATICALLY!

This complete packaging process, performed automatically for the first time! Form, fill, heat seal strip packets on one automatic machine. Assemble and heat seal packets in catch covers on another machine. For liquids, powders, tablets or any small objects, such as buttons or screws. Amazingly fast production that reduces packaging costs tremendously! Write for further details!



ALSO  
—CONTRACT  
PACKAGING  
of your products  
on our machines.

Enjoy big  
production savings  
without capital investment!  
Write now for quotations!

**MERCURY**

HEAT SEALING EQUIPMENT CO.

333 N. ELEVENTH STREET  
PHILADELPHIA 7, PENNA.



for results...  
call on "classified"

Time and again, individuals and companies in the packaging field have found solutions to their difficulties by advertising in the Classified Advertising section of MODERN PACKAGING. Here, the buyer and the seller have a chance to meet, the prospective employer and the prospective employee get an opportunity to look each other over, the manufacturer can shed his surplus materials or buy up someone else's.

Rates are most reasonable. It costs but a few dollars to put your message before the entire "packaging-minded" audience of MODERN PACKAGING. Just refer to CLASSIFIED ADVERTISEMENTS in the latter part of this magazine for rates. Then . . . call on "classified."

### FOR HELP WANTED

### TO BUY OR SELL USED EQUIPMENT

### TO FIND A JOB

### TO DISPOSE OF SURPLUS STOCKS

### FOR ESTABLISHING BUSINESS CONNECTIONS

ENT: Man  
injection  
tic mater-  
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West



## MODERN PACKAGING

A BRESKIN PUBLICATION

575 MADISON AVENUE, NEW YORK 22, N. Y.

MODERN PACKAGING

## Plants and people

Okla., sales offices in Kansas City, with **Brooks Gall** as manager. Associated with him are **Robert H. Short** and **Stanley J. Franzell**. A new sales office has been opened by **Hazel-Atlas** in the **Martin Brown Bldg.**, Louisville, Ky., with **J. Edward Porter** as manager. **George B. Dakan** has been made manager at Atlanta, Ga., succeeding **C. V. Gowing**, retired.



**The Mead Sales Co.**, Dayton, Ohio, has appointed **Frank C. Gerhart** to the newly created post of advertising manager for Mead papers. Mr. Gerhart will work with **Hubert S. Foster**, director of advertising. After spending several months in the Mead advertising production office in Philadelphia, Mr. Gerhart will headquarter in Dayton.

**Harris-Seybold Co.**, Cleveland, Ohio, manufacturer of offset lithographic printing presses, has acquired the assets of **C. B. Cottrell & Sons Co.**, builder of letterpress and gravure presses for the printing and publishing industries with plants in Westerly, R. I., and Milwaukee, Wis. Cottrell & Sons will be operated as a wholly owned subsidiary of Harris-Seybold, with **Donald C. Cottrell** continuing as president.

**Ray D. Hall** has been appointed president and general sales manager of the **Grant Paper Box Co.**, Pittsburgh, Pa.

**Richard A. Kimbel**, formerly with **Container Corp.**, is now a salesman for the **Gardner Board & Carton Co.**, Middletown, Ohio.

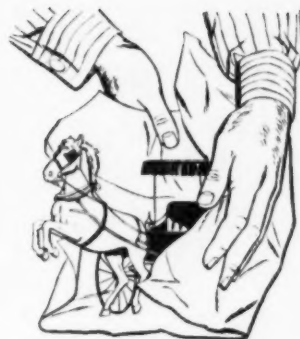


**Robert L. Gerson** has been made advertising manager of the **Atlanta Paper Co.**, Atlanta, Ga. Mr. Gerson served formerly as a member of the sales department. He is a director of the **Atlanta Junior Chamber of Commerce** and U. S. representative on the **Public Relations Commission** of the **Junior Chamber International**.

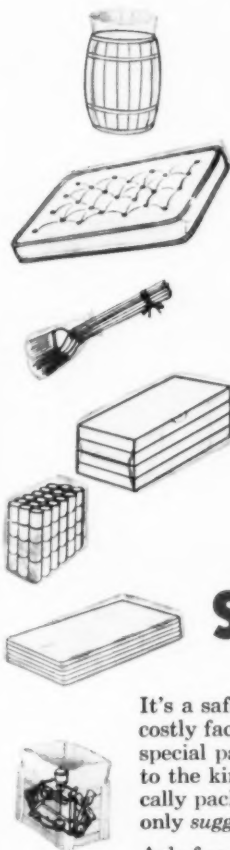
The **Pioneer Div.** of the **Flintkote Co.**, Los Angeles, has appointed **Philip F. Paul** as divisional administrative manager of the **Paperboard Div.**

**Howard F. Schnepf** has moved from the Detroit office to the home plant and office of the **Dow Chemical Co.**, Midland,

# STOP horse-and-buggy wrapping . . .

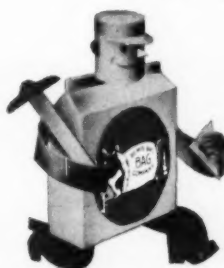


## Use Bemis Paper Bags and cut your packing and shipping costs!



It's a safe bet that you can save time and labor—the most costly factors in your packaging operation—by converting to special paper bags made by Bemis. There is almost no limit to the kinds, shapes and sizes of products you can economically package in Bemis Paper Bags. The products shown here only suggest the possibilities.

Ask for the Bemis Paper Specialty Man to help work out your problem.



## Bemis

Paper Specialty Plants  
1054 South Vandeventer  
St. Louis, Mo.  
Albion, New York

### MAIL THIS TODAY

**BEMIS BRO. BAG CO.**, Paper Specialty Plant  
1054 South Vandeventer, St. Louis, Mo.

Could you suggest a more economical package that would be suitable for our product?

We manufacture \_\_\_\_\_

Name \_\_\_\_\_

Firm Name \_\_\_\_\_

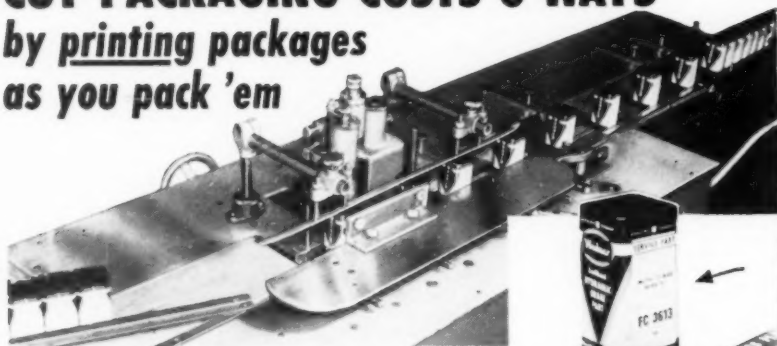
Street \_\_\_\_\_

City \_\_\_\_\_

Zone \_\_\_\_\_ State \_\_\_\_\_

## CUT PACKAGING COSTS 6 WAYS

by printing packages  
as you pack 'em



If you make more than one product—or your product comes in different colors, sizes, flavors, etc.—the Gottscho MARKOCODER will save you money. This is the machine that enables you to use a common package for your whole line by printing names, numbers, other product identification on one or more blank panels of partially-printed cartons, boxes, cans, canisters, jars, etc. . . . automatically, as part of the packaging operation. Consequently, it slashes package inventories . . . reduces labor costs . . . cuts unit package costs . . . prevents down-time on the line . . . eliminates loss from obsolescence . . . simplifies inventory control.



*Gottscho*

Write for descriptive MARKOCODER brochure today

**ADOLPH GOTTSCHO, INC.**

**Hillside 5, N. J.**

50  
Years of  
Leadership

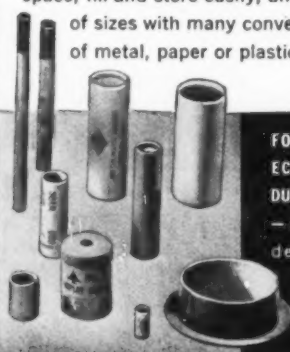
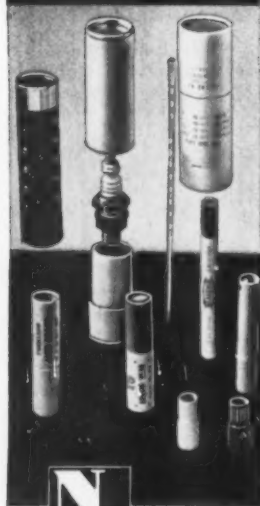
For more  
durable  
packages

**Niemand Bros. Products**

*Offer strength and protection*

For Hard Working Packages our line of **COMMERCIAL, INDUSTRIAL and ELECTRONIC** packaging is hard to surpass.

Manufactured to exact specifications, they provide necessary protection, allow plenty of usable display space, fill and store easily, and come in a wide range of sizes with many convenient closure styles of metal, paper or plastics.



FOR  
**ECONOMIC PACKAGING—  
DURABILITY & PROTECTION**  
—allow us to assist in  
developing the best  
package for  
your needs.

**NB**

**NIEMAND BROS. INC.** Manufacturers of

**PAPER TUBE PRODUCTS**

37-01 THIRTY-FIFTH AVENUE • LONG ISLAND CITY 1, N. Y.

*Plants  
and people*

Mich., where he will be in the molding powders section of the plastics sales department. F. V. Duffy will replace Mr. Schnepf in Detroit. F. C. Sullivan, a coatings salesman, has joined Dow's Minneapolis office.

**Green Bay Box Co.,** Green Bay, Wis., has promoted **John P. Madden** to executive vice president of the company's Folding Carton Div., and **Walter Blumenkamp**



Mr. Madden (left) and Mr. Blumenkamp

to vice president in charge of sales at the Corrugated Containers Div. Elmer Carlson is now treasurer.

Western Waxed Paper Div., **Crown Zellerbach Corp.**, San Leandro, Calif., has appointed **Arthur Hauschild** as plant superintendent to succeed **Von Hunter**, who has resigned to establish his own business in the East. **Clayton Hayes** succeeds Mr. Hauschild as superintendent of the firm's Los Angeles plant.

**Container Corp. of America**, Chicago, has elected **Albert H. Gordon** to the company's board of directors.

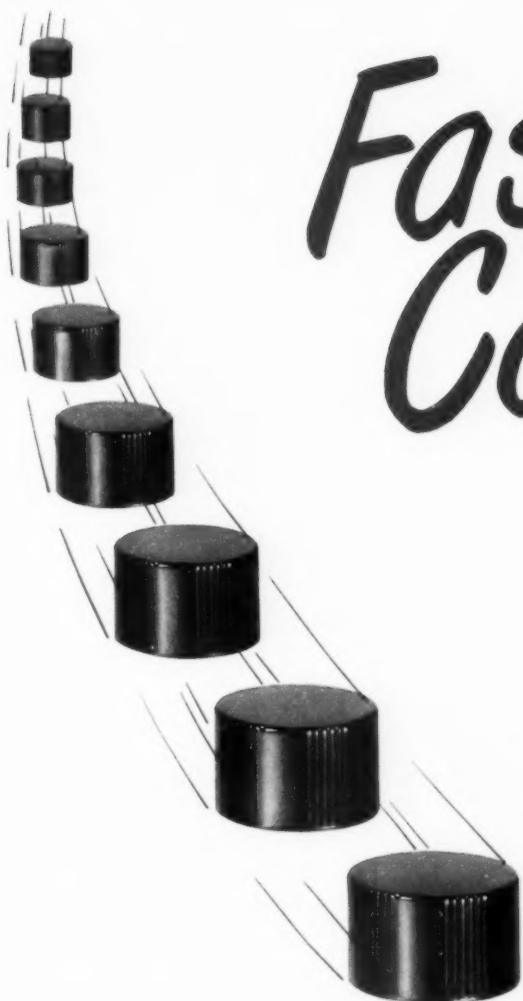
**Robert F. Jackwerth** has been appointed sales representative of **Chippewa Paper Products Co., Inc.**, Chicago. Mr. Jackwerth will operate out of Chicago.

A new company to be known as **Cellulose Products Co.** has been formed in High Point, N. C., to engage in the manufacture of cellulose wadding packaging material and other types of packaging material for industrial use. The new company will take over the operation of the **Cellucrepe Co.** which has been in High Point for about two years. The name "Cellucrepe" will be retained as a trademark for the cellulose wadding type packaging. **E. W. Heelas** and **Martin Doll** are associated with the new firm.

**Arthur J. Olsen** has been appointed works manager of **Simplex Packaging Machinery, Inc.**, Oakland, Calif., subsidiary of **Food Machinery & Chemical Corp.** **W. A. Wolff** has been appointed western operations manager of Food Machinery's **John Bean Div.**, San Jose, Calif.

The **Sylvania Div.**, **American Viscose Corp.**, Philadelphia, has appointed **Myron W. Brill** as a sales representative in the





# Faster Capping

There's a good chance your line speeds are being limited by the strength of your caps. But how to get the strength you need without buying heavier caps?

Fortunately, the secret of cap strength lies not in weight alone but also in how the plastic is distributed within the cap.

And that's why Armstrong's Hi-Tork® Caps have such outstanding strength. Each part, dome, skirt, or thread, has exactly the weight it needs for the load it has to take.

The final proof, of course, is on your own lines. We'll gladly help you get that proof in a test run. Write Armstrong Cork Company, Glass and Closure Div., 5302 Crystal Street, Lancaster, Penna.



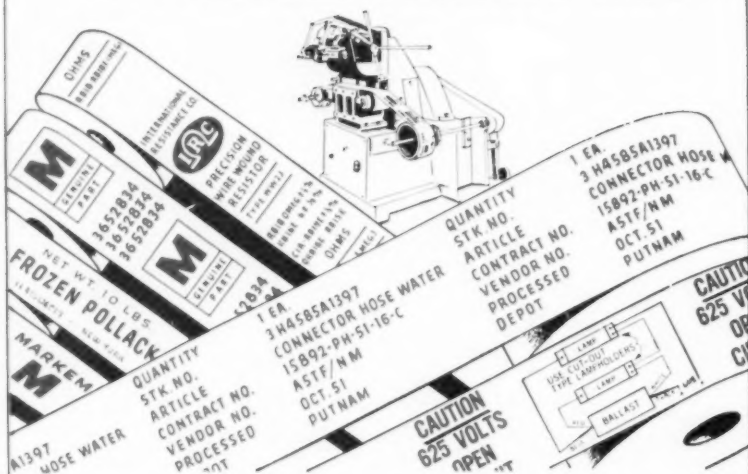
\* T. M. reg. applied for



**ARMSTRONG'S "HI-TORK" MOLDED CAPS**

**MARKEM****SOLVED THIS MARKING PROBLEM**

## PRINTING LABELS ON PRESSURE SENSITIVE TAPE



The introduction of pressure sensitive tape for industrial uses offered many advantages if label data could be printed on the tape *in the plant itself when needed*. Markem developed methods that permit printing of stock number, part number, trade mark or other designation on this tape. Label inventory problems are thus eliminated. Manufacturers can now print the exact number of labels required . . . readily changing variable information or color of ink when desired. The Markem method used includes a Markem machine which makes up to 85 imprints per minute, rewinds the roll of tape automatically, and shuts itself off after a selected number of imprints. Thus Markem has provided industries of all types with a more modern, more attractive and less expensive means of labeling.

**MARKEM****MARKS THEM ALL**

### CAN MARKEM HELP YOU?

Printing labels on pressure sensitive tape is but an example of how Markem solves industry's marking problems. Markem has been providing industry with production techniques and equipment to identify, decorate or designate its products, parts and packages since 1911. Markem also provides technically trained men who are available in your area to assure *continued* satisfaction with Markem methods and equipment.

When you have a marking problem, tell us about it and send a sample of the item to be marked. Perhaps a complete Markem method has already been developed to solve your problem. If not, Markem will work out a practical solution.

Markem Machine Company, Keene 1, N. H., U.S.A.

**MARKEM**  
... TO MAKE YOUR MARK

## Plants and people

New York area. W. J. Howells has been assigned as salesman in the southern Pennsylvania and West Virginia territory and L. D. Tyler will represent the firm as salesman in northwestern Pennsylvania. Robert B. Thornton will have southern Massachusetts, Rhode Island and part of Boston as his territory.

Reynolds Metals Co., Louisville, Ky., has inaugurated service on its industrial private-wire telegraph network whose nerve center is located in Louisville. The wire network, installed by Western Union, links telegraphically all of Reynolds' plants and major sales offices. There are 48 stations on the telegraph system, which is designed to transmit a message from any point on the network to any of



Reynolds' telegraph center in Louisville

the other stations in an average time of three minutes. All messages are channeled through the communications center in Louisville, where key information is automatically retained for record purposes. The new network has about 12,000 miles of circuits in 23 states, linking Reynolds' facilities from coast to coast.

Leroy D. Frisbie has been elected a director of the Westfield River Paper Co., West Conshohocken, Pa., manufacturer of glassine and greaseproof papers.

The Weaver Packaging Co., manufacturer of transparent boxes and displays, has moved into a new plant at 3700 Clifton Pl., Montrose, Calif.

Pat Connolly has been named sales manager for Cadillac Products, Inc., Ferndale, Mich., manufacturer of industrial paper specialties.

S. S. Jacobs has retired as design supervisor of the closing machine department of American Can Co., New York, after 45 years with the firm. He will establish a consulting service on the Pacific Coast for the development, design and production

**AVAILABLE now!**

*As thin as*  
**.0005** ( $\frac{1}{2}$  MIL)  
UP TO 60" WIDTH



# POLYETHYLENE TUBING and SHEETING

*Uses* — FOOD and DISPLAY PACKAGING, CARTON and BARREL LINERS.  
Non-Toxic, Odorless, Resistant to Alcohols and Most Acids.

- **maximum Clarity**
- **uniform Gauge**
- **maximum Yield**

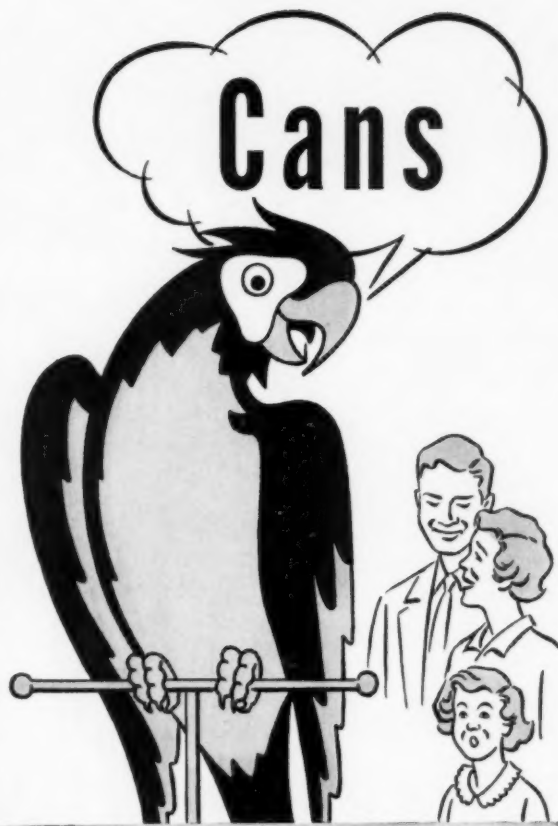
*Perfected* TO OFFER GREATER ECONOMIES  
AMPLE SUPPLIES! IMMEDIATE DELIVERY!

.0005 ( $\frac{1}{2}$  MIL)  
.00075 ( $\frac{3}{4}$  MIL)  
.001 (1 MIL)  
.002 and up

SAMPLES, PRICES, TECHNICAL  
DATA, Etc.

NAME \_\_\_\_\_  
COMPANY \_\_\_\_\_  
ADDRESS \_\_\_\_\_  
CITY \_\_\_\_\_ STATE \_\_\_\_\_

**GERING** *Products • Inc.*  
KENILWORTH, N. J.  
EXTRUDED PRODUCTS DIVISION



**HEEKIN**  
*Lithographed*  
**CANS**

**Y**OUR product comes *first*. That's your business. The can you pack it in is *our* business. That's why Heekin Lithographed Cans are Product Planned . . . beginning with the product itself . . . the type of can, the shape, size, design and true lasting colors . . . all this is our business. Think it over . . . talk it over . . . then talk to us about Heekin Lithographed Product Planned Cans.

**Heekin**  
**LITHOGRAPHED Cans**

THE HEekin CAN CO., Cincinnati 2, Ohio

**PRODUCT PLANNED**



## Plants and people

of both food and packaging machinery.

Government officials participated in the opening program for American Can's new container-making plant at Plymouth, Fla.

**Majikweld of California, Inc.**, converter of polyethylene film, has moved to a larger plant at 1300 Santa Fe Ave., Los Angeles 21.

**Anderson Bros. Mfg. Co.**, Rockford, Ill., has named **Swan F. Anderson** chairman of the board. Mr. Anderson is succeeded as president by **Ralph F. Anderson**, who also retains his position as treasurer.

**F. C. Maywood** has been elected vice president in charge of sales of **Anchor Cap & Closure Corp. of Canada, Ltd.**, Toronto, subsidiary of **Anchor Hocking Glass Corp.**

**Alford Cartons**, Ridgefield Park, N. J., has appointed **Paul F. Bowman** as packaging engineer in the Technical Dept. Mr. Bowman has designed several machines for use in packaging, including a set-up machine for Alford's Rigid-Pak.

**Interchemical Corp.**, Printing Ink Div., New York, has appointed **Hugh S. Fitch** manager of the IPI Oakland, Calif., factory. Mr. Fitch succeeds **L. F. McGuff** who is joining the company's International Div. in Latin America.

**Arthur D. Little, Inc.**, Cambridge, Mass., will open a Western regional office in San Francisco with **Christian J. Matthew** in charge and **Richard Newhall** as his associate.

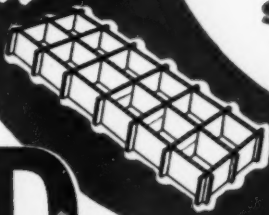
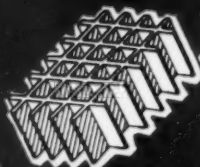
**F. Norman Hartmann** has been appointed assistant to the president of **Lily-Tulip Cup Corp.**, New York. Mr. Hartmann was formerly a director and president of the **Butler Paper Products Co.**

**Merit Container Corp.**, New York, producer of corrugated cartons and corrugated specialties, has appointed **Jack C. Fentress** as general plant manager, with headquarters at the Wassaic, N. Y., plant.

**Jack J. Bodie** has been appointed to the national sales staff of **Milprint, Inc.**, Milwaukee, Wis. He will be located in Milprint's New York office.

**National Container Corp.**, New York, has acquired the **Seaboard Container Corp.**, manufacturer of corrugated kraft shipping boxes, through the acquisition of a controlling interest in Seaboard's stock. Seaboard, which will become a division

# PARTITIONS FOR PROTECTIVE PACKAGING



**MADE TO YOUR  
EXACT  
SPECIFICATIONS**

**WRITE, PHONE or WIRE  
for QUOTATIONS on  
YOUR REQUIREMENTS**

**P**

**PETER PARTITION CORP.**

Manufacturers of Cardboard Partitions

19-21 HEYWARD ST. Telephone: Triangle 5-4033 BROOKLYN 11, N. Y.

**MANHASSET**

*precision*

**PRINTING AND  
CONVERTING MACHINES**

**PRESSES . . . Flexographic, Gravure, Letterpress,  
Lithographic — wet and dry**

**BAG MACHINES . . . for hand-grip specialty,  
flat, gusseted and multiwall bags**

**COATING and TINTING EQUIPMENT**

**CONSTANT TENSION UNITS • WEB GUIDES**

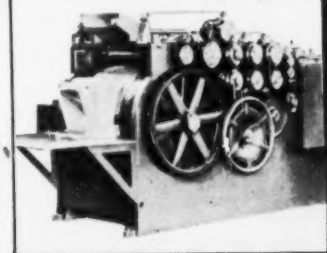
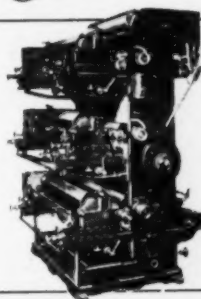
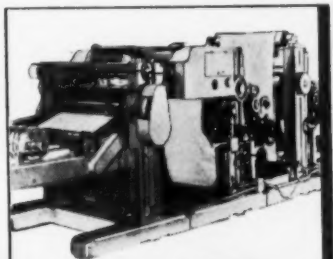
**REWINDERS • SLITTERS • SHEETERS • STACKERS**

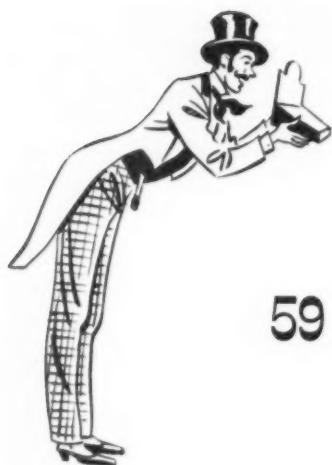
**CUTTING and CREASING EQUIPMENT**

**MANHASSET**

**MACHINE CO.**

Mineola, New York





59 in '54



John Brooks and George Porter started this business in 1895, when printing presses were operated by steam.

Ideas, energy and a devotion to the needs of their customers built our company and its enviable reputation.

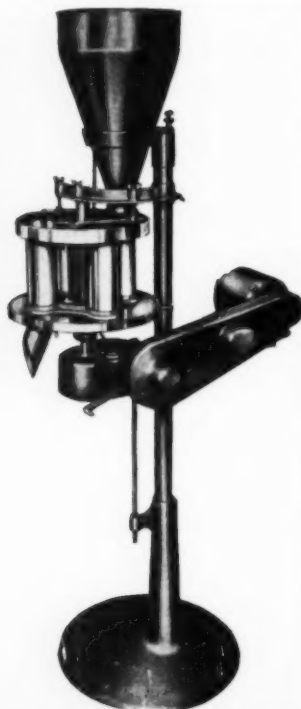
May we show you in 1954 how better FOLDING BOXES and DISPLAYS can build your business?

**Brooks  
AND  
Porter** INC.

304 HUDSON STREET  
NEW YORK

**FILLMASTER  
VIBRATORY  
FILLER**

*for guaranteed weight  
accuracy on your dry  
and semi-dry products*



**STUYVESANT ENGINEERING COMPANY**

107 STUYVESANT AVENUE

LYNDHURST, NEW JERSEY

## Plants and people

of National Container, will continue to operate its plants at Bristol, Pa., and Newark, N. J., with the same personnel. **Frederic R. Mann**, president of Seaboard, will join National Container in an executive capacity.

**E. R. Smith** has been promoted to sales manager and **John H. Thresher** to assistant sales manager of National's Milwaukee office.

**Lawrence J. Cullen** has been appointed sales development manager for the **Transparent Package Co.**, Chicago. Mr. Cullen was formerly associated with Automatic Controls Corp., and with the Electrical Div. of Nesco, Inc.



Mr. Cullen

Transparent Package Co. recently celebrated the 20th anniversary of its incorporation. Company salesmen from the United States and Canada were honored at the annual salesmen's award banquet that week.

**Ray I. Mitchell** has been appointed as sales-service representative for **Vulcan Steel Container Co.**, Birmingham, Ala.

**Oneida Paper Products, Inc.**, Clifton, N. J., has elected **Sam Stein** as president and treasurer; **Malcolm Kimmelman** and **Robert E. Pentz** as vice presidents; **Donald Zucker**, secretary; and **Louis J. Stein**, assistant secretary and treasurer. Mr. Zucker is now chairman of the board and **Gerald Fox** vice chairman.

**Packer Machinery Corp.**, New York, manufacturer of liquid-filling machinery, has appointed **Adolph Laikauf** sales manager.



Mr. Whalen

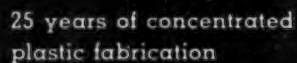
**Don T. Whalen** has been named to handle sales of the **Rucker** automatic drum filler, product of the **Rucker Co.**, Oakland, Calif., manufacturer and distributor of fluid power systems. Mr. Whalen will headquarter in the Oakland office.

**E. W. Tinker**, executive secretary of the **American Paper & Pulp Assn.**, was guest speaker at the recent staff meeting of **National Starch Products**, New York. **Frank Greenwall**, president of **National Starch**, opened the meeting.

**St. Regis Paper Co.**, New York, has elected **Edgar N. Eisenhower** to the board, filling the vacancy created by the death of **William K. Dick**. **T. E. Button**,



as **USUAL** with



Over 400,000 square feet  
in three big plants

Design, engineering and development staffs

Patent applied for process permits unusual new designs that are sensationally different

Every type and size of plastic container up to 5 gallons

Irwin design-engineers offer packaging consultation without obligation... Your inquiry is invited.

**IRWIN CORPORATION**

**Main Office: Fitchburg, Massachusetts**

Plants at Leominster, Mass. and Nashua, N. H.

Sales Office: 200 Fifth Avenue, New York

**IRWIN**  
CORPORATION

*Flyndustries presents—*

## CLOSURES...and their supplements

Dealing with Flyndustries puts a closure-user in the unique position where he can ask for almost any type or style of closure . . . and be reasonably certain of getting what he's after. Representing the combined facilities of these and other fine companies, Flyndustries offers you

a flexible, adaptable service which can produce even the most unusual closures at budget-wise prices.

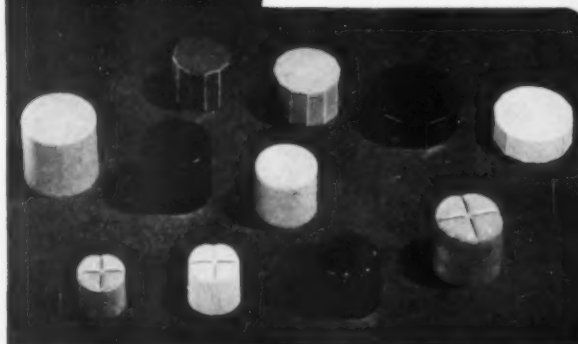
Closures are never a problem . . . when you call on Flyndustries.

*Flyndustries Inc.*

141 East 44th Street, N. Y. 17, N. Y.

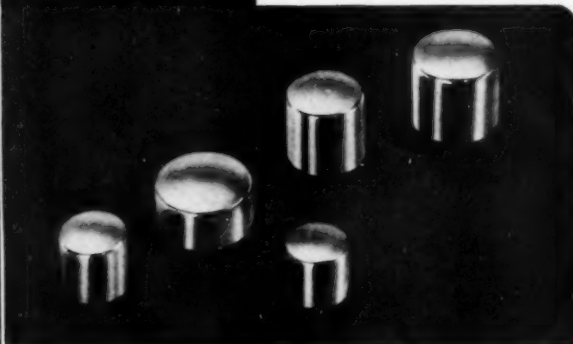
SCOTT PLASTICS CO.

stock & custom molded closures



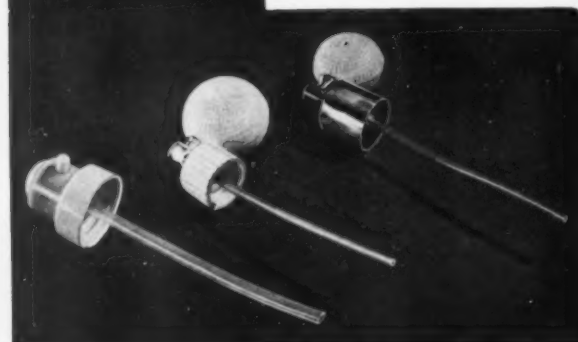
AMERICAN ASSOCIATES MFG. CO.

distinctive brass closures



EVANS CROWDER CO.

atomizers, dispensers, lotion pumps



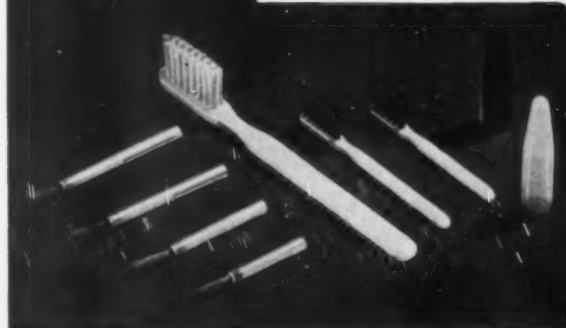
STULL ENGRAVING CO.

"Sealiner" polyethylene liners, plugs, orifice reducers & applicators



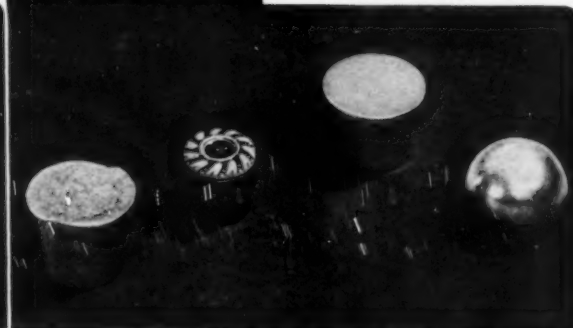
ANCHOR BRUSH CO.

all types of cosmetic brushes—mascara, nail polish, etc.



CASTLE PLASTICS, INC.

combination plastic and brass closures from stock tools





## Plants and people

vice president of St. Regis Sales Corp., sales subsidiary of St. Regis Paper Co., has been appointed sales manager for bleached and unbleached sanitary and specialty boards and bleached cup stock and similar papers manufactured at the St. Regis kraft mills at Tacoma, Washington and Pensacola, Fla.

Establishment of a new products sales group for polyethylene resins, with Edmund S. Childs as sales manager, has been announced by the Plastics Div., Monsanto Chemical Co., Springfield, Mass. The move was made in anticipation of the start, late in 1954, of the company's first polyethylene production unit.

Reig G. Fordyce has been promoted to the newly created post of director of development and technical service of Monsanto's Plastics Div. Eli Haddad and Ivan V. Wilson have been made assistant directors of technical service. The appointments coincide with Monsanto's recently announced \$1,250,000 technical service and development program which will include a new applications and development research center.



Mr. Childs

Phoenix Industries, Inc., Indianapolis, Ind., manufacturer of aluminum-foil containers, has appointed Consolidated Paper Co., Inc., Brooklyn, as distributors of its Foil Master Pak-Ware in the East. James Ginsberg of Consolidated Paper will direct and co-ordinate sales to industrial users, jobbers and exporters.



Mr. Larson

L. E. Larson has been promoted to merchandising manager, tape products, for Minnesota Mining & Mfg. Co., St. Paul, Minn. Mr. Larson was formerly assistant merchandising manager under A. H. Redpath, who recently was named general manager of 3M's newly created ribbon division. John J. Jungbauer has been promoted to director of tape development engineering by Minnesota Mining.

Lt. Col. Charles E. Woodrow, U.S.A., has been appointed chairman of the Army Packaging Board, filling the vacancy caused by the resignation of James A. Sargeant. Col. Woodrow's headquarters are in the Pentagon Bldg., Washington, D. C., in the office of the assistant

## PAN AMERICAN Carries the Passengers



### FOIL KRAFT Carries the Steak!

Tasty Swiss steak served aloft to Pan-American World Airways passengers is cooked, packed and frozen in Foil Kraft pure aluminum foil trays... then put aboard the plane, heated, and served in the very same sparkling, attractive containers! From the caterer's kitchen to the Pan-American World Airways passenger, Foil Kraft eliminates extra work, extra handling... and preserves food flavors perfectly because it is non-porous.



Food supplies for each flight are delivered to the Clippers by commissary trucks. Foil Kraft trays are on the job, saving weight and reducing handling.



Preparing to serve a meal aloft, the Pan-Am stewardess simply places the now-heated Foil Kraft plate and its tasty portion of Swiss steak on the passenger's tray — no bothersome "dishing out"!

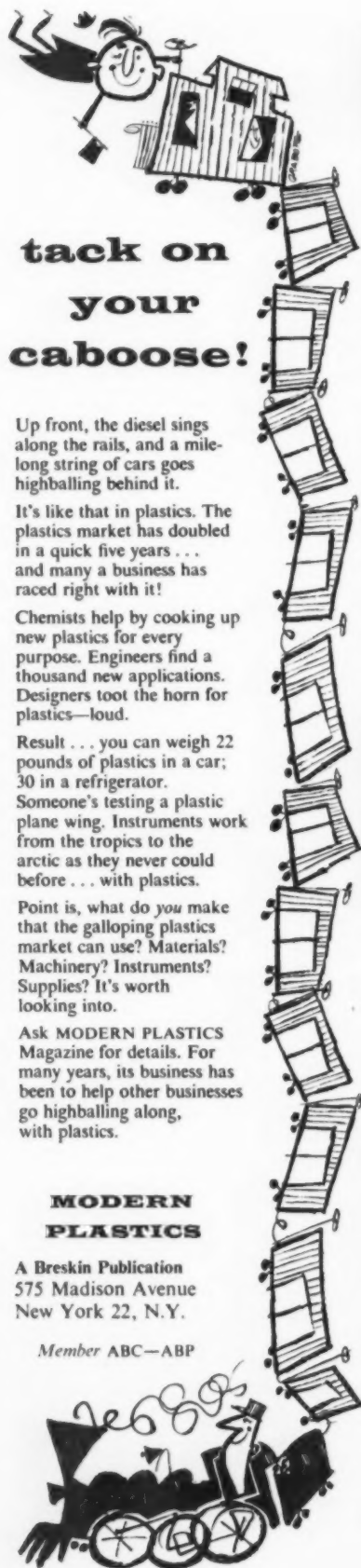
Original cooking or baking... packaging and faster freezing... done better at less cost in expendable Foil Kraft containers. FOIL KRAFT can save time and money for you, just as for Pan-American. See your jobber or write for further details and catalog.



**FOIL KRAFT, INC.**

1805 Sichel Street  
Los Angeles 31, Calif.  
Chicago Plant: 420 N. Kedzie Avenue, Chicago, Ill.





## tack on your caboose!

Up front, the diesel sings along the rails, and a mile-long string of cars goes highballing behind it.

It's like that in plastics. The plastics market has doubled in a quick five years... and many a business has raced right with it!

Chemists help by cooking up new plastics for every purpose. Engineers find a thousand new applications. Designers toot the horn for plastics—loud.

Result... you can weigh 22 pounds of plastics in a car; 30 in a refrigerator. Someone's testing a plastic plane wing. Instruments work from the tropics to the arctic as they never could before... with plastics.

Point is, what do you make that the galloping plastics market can use? Materials? Machinery? Instruments? Supplies? It's worth looking into.

Ask MODERN PLASTICS Magazine for details. For many years, its business has been to help other businesses go highballing along, with plastics.

### MODERN PLASTICS

A Breskin Publication  
575 Madison Avenue  
New York 22, N.Y.

Member ABC—ABP

## Plants and people

chief of staff for logistics. The vice chairman of the board is Maj. Marion L. Campbell.

Earl C. Lenz has been elected vice president of sales and advertising for Morningstar, Nicol, Inc., New York, and all its subsidiaries. Mr. Lenz was formerly vice president and general sales manager of Paisley Products, Inc., subsidiary of Morningstar. He will headquarter at the firm's executive offices in New York.



Mr. Lenz

Semet-Solvay Petrochemical Div., Allied Chemical & Dye Corp., New York, has opened its new Niagara River Petrochemical plant at Tonawanda, N. Y., for production of polyethylene products. The ethylene is derived from gas which is produced from fuel oil in equipment de-



Allied's new petrochemical plant

signed and erected by Semet-Solvay Engineering Div. This is an innovation in the petrochemical industry, as most plants have been built near natural gas lines. Production is estimated at 20 million pounds annually.



Mr. Kashdan

Polymer Industries, Inc., New York, has appointed Kenneth Kashdan to its sales staff in the Middle Atlantic States. Mr. Kashdan will service laminators, packaging firms and bottlers as well as other industries. Polymer has announced a new expansion program keyed to its modern new plant scheduled to open soon in Stamford, Conn.

Pak-Rapid, Inc., Philadelphia, Pa., has appointed exclusive agents in Cleveland, Cincinnati, St. Louis and Los Angeles to sell the Auto-Pak machine for packaging products in heat-sealing material such as cellophane, foil, etc. The company has also opened an export division at 751 Drexel Bldg., Philadelphia.

Crystal Transparent Corp. has moved its plant and offices to 101 W. Forest Ave., Englewood, N. J. The new quarters are equipped with the latest machinery for conversion of transparent packaging materials and for special process printing.

P. S. Holmquest has been named manager of the Glass Container Dept. of the Glass & Closure Div., Armstrong Cork Co., Lancaster, Pa. He succeeds H. Clayton Seaman, Jr., who died on Dec. 19. Mr. Holmquest has been with Armstrong since 1937.



Mr.  
Holmquest

Kenneth T. Barker, Elliott R. Barker, Jr., and Elliott R. Barker have formed the Deerfield Plastics Co., Inc., 271 Main St., South Deerfield, Mass., for the purpose of extruding thermoplastics.

Alford Cartons, Ridgefield Park, N. J., subsidiary of Continental Paper Co., has purchased the Bogota mill formerly occupied by Robert Gair Co., Inc. The plant will be used for storage purposes and future expansion.

George A. Taffel, president, Taffel Bros., Inc., New York, maker of gift-wrap ribbons, has announced a free advice and counsel plan to stores setting up gift-wrap departments.

H. Clayton Seaman, Jr., manager of glass container sales for the Armstrong Cork Co., Lancaster, Pa., died Dec. 19 at his home in Peapack, N. J., after a long illness. Mr. Seaman was 56. Well known in the packaging field, he was a pioneer in the plastic closure business and in recent years had been active in the affairs of the Glass Container Mfrs. Institute.

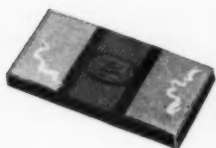


Mr. Seaman

Paul M. Beach, manager of coating and converting sales of Riegel Paper Corp., New York, died suddenly on Dec. 20. Mr. Beach had been with Riegel since 1925.

Palmer J. Lathrop, president of the Cameron Machine Co., Brooklyn, died on Dec. 27, the victim of a hunting accident.

Hutchison S. Hinkle, former president and chairman of the board of National Folding Box Co., Inc., New Haven, Conn., died at his home on Dec. 18.



## Wrap and label your products to sell and save on the Oliver

**"Oliver" Wrappers handle widest range of packages**

**"Oliver" quick adjustability saves dollars every day**

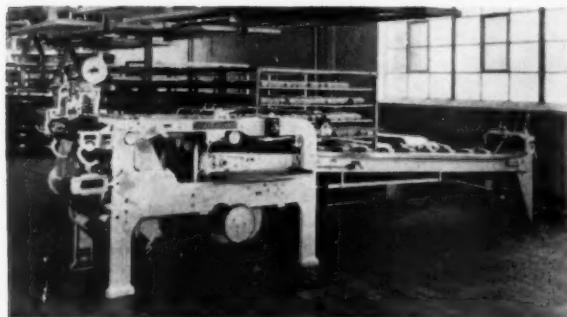
**"Oliver" Labeling System simplifies your production**

Textiles and paper specialties, baked goods and meats . . . if your products are remotely similar to these, the "Oliver" can give you finer packages at less cost. Using the latest packaging materials it neatly wraps, and heat or glue seals your package for utmost protection. It will also heat-seal a smart label to the package. "Oliver" quick-adjustability keeps the unit cost low. Each of 7 models handles packages in a wide range of sizes—speeds up to 50 a minute. Infeed conveyors 6 to 15 feet long. An electric eye registers printed wrappers. Its many features—plus the Labeling System—save dollars daily. Write for complete details.



### "OLIVER" ROLL-TYPE LABELING SYSTEM

A colorful roll-type diecut label (printed by Oliver) is heat-sealed to the wrapper by the automatic Labeler. If desired, a "blank" label can be imprinted with essential information just before it is applied. Imprint items can be changed in a few seconds. The "Oliver" Labeler — with or without Imprinter — is a complete unit that can be attached to other makes of wrapping machines. Investigate!



### "Oliver" Wrapping Machine

with Automatic Roll-Type Labeling System

OLIVER MACHINERY COMPANY · GRAND RAPIDS 2, MICH.

FEBRUARY 1954



**JUST ONE EXAMPLE  
OF THE MANY  
DIXIE PRODUCTS  
DEVELOPED TO FIT YOUR  
PACKAGING NEEDS . . .**

Chances are you have already used some of Dixie's products . . . packages in glassine, Super Fresheen, cellophane, foil or acetate.

If so, you are already familiar with the superior quality of a Dixie wrapper or package, because for more than 30 years Dixie has been a leader in manufacturing and converting protective custom packages for the food industry.

Now Dixie puts this long experience and their modern plant facilities to work to produce for you outstanding polyethylene bags . . . tight seals . . . vivid and high gloss colors . . . fine registration from flexographic presses.

Send for samples today and compare for yourself.

**DIXIE**

*Wax Paper Company*

DALLAS • MEMPHIS • WASHINGTON, N. J. • MEXICO, D. F.



## For your information

Rules for the **National Paper Box Mfrs. Assn.'s 1954 Box Competition**, entries for which must be in by March 1, contain several departures from previous competitions. One is the elimination of the Grand Award. Another is a score-sheet system for use by the judges. Using score sheets, each judge will examine each box entered and give it a specific mark or grade in each criterion. This system, the association believes, will get away from the possibility of a forceful judge swaying or influencing people who are as well qualified but who do not have the capacity or inclination for argument. Under Class A—General Superiority According to End Use, the judges will consider not only merchandising appeal, but identification and convenience of use by consumers. Under Class B—Best Surface Design and Execution, quality of printing and layout as well as use of color will be considered. Under Class C—Superiority of Construction, equal weight will be given to the workmanship factor. Under Class D—Best Display Box, all factors considered in Classes B and C will be considered, as well as practical merchandise display value and the ease of erection and display. Entry blanks may be had on request to the association, Broad & Arch Sts., Philadelphia 7, Pa. Winners will be announced and all entries will be on display at the 1954 annual meeting of the NPBMA, Drake Hotel, Chicago, May 16-19.

More than 40 leading food manufacturers now are or soon will be using the new quality-protection seal—a small shield carrying the words "quality protected by Reynolds Wrap aluminum packaging"—currently being offered by the **Reynolds Metals Co.**, Louisville, Ky., to users of their aluminum foil packaging. Motivating this new seal is the consumer education program Reynolds has carried on during the past few years to educate the housewife to the protective value of aluminum foil for storing perishable foods in her own kitchen. Coinciding with this promotion of foil at the consumer level, Reynolds has been responsible for many "firsts" in foil packages for the commercial food field. The Reynolds Wrap seal bridges the gap between the two fields and enables users of Reynolds foil packaging to benefit from the promotional build-up at the consumer level for Reynolds Metals foil. An extensive advertising program is being inaugurated to support the new seal.

**Continental Can Co., Inc.**, New York, has obtained a court order temporarily sus-

pending the compensatory rental provision of the 1950 court decree that would have necessitated increases of more than 75% in the 1954 rates canners would pay for renting container-closing machines. The order, handed down by **Judge George B. Harris** of the San Francisco Federal District Court, suspends for one year the provision of the 1950 decree that required all such rental and service charges to cover completely the costs of leasing, servicing, depreciation, insurance and return on investment after Jan. 1, 1954. Continental's motion was based on the fact that closing-machine rentals were reaching such unreasonable levels that canners were being forced to purchase the equipment, even when they were unwilling or financially unable to do so.

The premiere showing of **Owens-Illinois Glass Co.'s** new 3-D motion picture titled "There Goes Your Reputation" was held recently at the Waldorf-Astoria Hotel in New York. Designed for showing particularly to drug wholesalers' salesmen and to pharmacy colleges, the 3-D sound-color film emphasizes the care, precision and accuracy which goes into the manufacture of Duraglas prescription containers. Wearing polarized glasses, the viewer is taken on a tour of the Gas City, Ind., plant of Owens-Illinois, where the prescription containers are made, and through the Duraglas Center in Toledo, the company's customer research center. The giant 60-ton Owens bottle-making machine is shown in operation in the colorful depth permitted by the 3-D process. The film shows the entire manufacturing operation, through to the inspection line. The film was supervised by **R. F. Miller**, manager of Owens-Illinois' Prescription Ware Div., and made by **Joseph Jackson**, manager of the company's Photographic Dept. Requests for showing this new film should be made to the Prescription Ware Div., Toledo, Ohio, or to Owens-Illinois' glass container branches.

The various ASTM standard and tentative specifications, test methods and definitions of terms pertaining to paper and paper products, and shipping containers, are brought together in convenient form in one publication. The 390-page book, titled "ASTM Standards on Paper and Paper Products and Shipping Containers," is available from the **American Society for Testing Materials**, 1916 Race St., Philadelphia 3. It is priced at \$3.50 per copy for one to nine copies and \$2.65 each for 10 to 49 copies. Prices of the

publication to ASTM members are \$2.65 and \$2.10, respectively.

ASTM has also published a 100-page book titled "Manual on the Quality Control of Materials." This volume is a revision of the ASTM book, "Manual on Presentation of Data," first published in 1933. Copies, available from the society, are priced at \$1.75 per copy for one to nine copies and \$1.35 each for 10 to 49 copies. Prices to ASTM members are \$1.35 and \$1.10, respectively.

**The Society of Industrial Packaging and Materials Handling Engineers** has appointed the following new directors: **Frank W. Green**, Chicago industrial consultant (Eastern region); **A. M. Lowmsbury** of Railway Warehouses, Inc. (Central region); **C. L. Lippman** of U. S. Steel Co. (Western region); **Dean H. C. Rountree** of Temple University; **P. O. Vogt** of General Electric Co., and **J. L. Ware** of American Excelsior Co. **R. C. Cragg**, **R. H. Freeman**, **W. L. Utley** and **M. C. Weisenhorn** were re-appointed as directors. At a meeting of the new board of directors, a lifetime membership in SIPHME was voted for **R. F. Weber**, recently retired from International Harvester Co., in recognition of his efforts as first president and first chairman of the board of the society. Gift certificates were voted for **Mr. Vogt** and **Ray C. Sell** of the Koehring Co., who recently retired as chairman and vice chairman, respectively, of the board.

SIPHME national headquarters have been moved to 111 W. Jackson Blvd., Chicago 4. Larger space has been taken in preparation for the employment of an additional person who, as presently con-

### What's doing

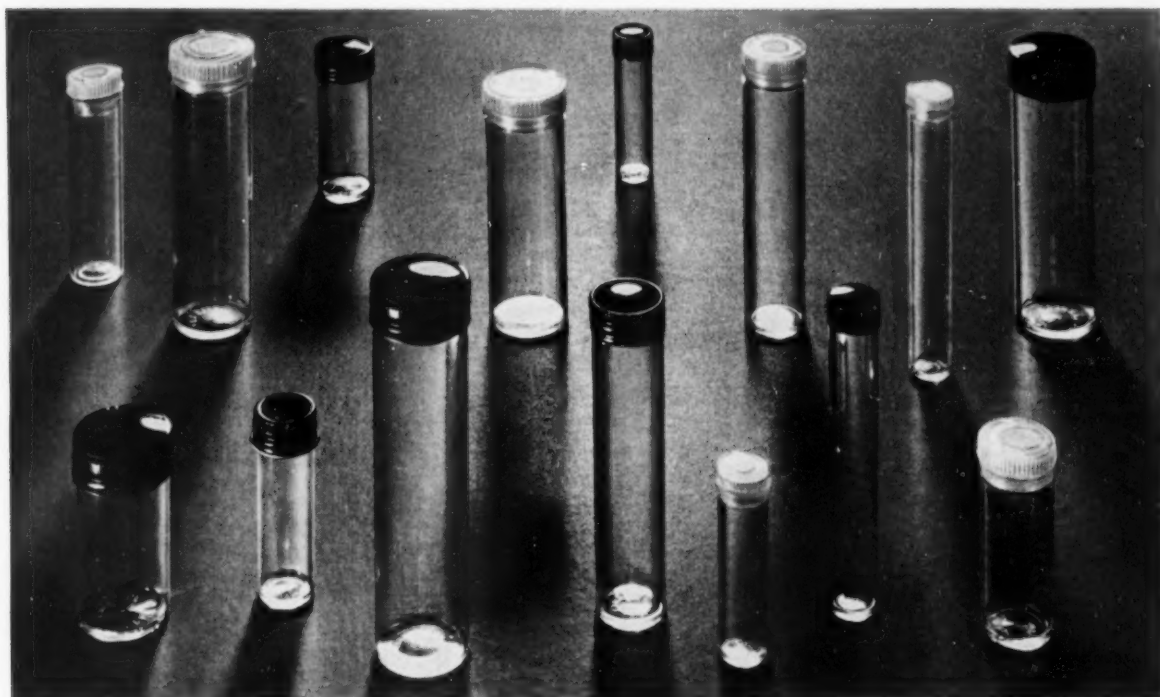
- Feb. 13-15—**Institute of American Poultry Industries**, Silver Anniversary Fact Finding Conference, Kansas City, Mo.
- Feb. 15-17—**American Management Assn.**, Personnel Conference, Palmer House, Chicago.
- Feb. 21-24—**National Wholesale Frozen Food Distributors Assn.**, Annual Convention, Waldorf-Astoria, New York.
- Mar. 4-5—**Western Candy Conference**, Mark Hopkins Hotel, San Francisco.
- Mar. 9-12—**American Management Assn.**, Conference on General Management, Fairmont Hotel, San Francisco.





# STYRON VIALS

They're sparkling, lightweight, durable . . . give you packing, shipping and sales advantages at low cost!



Pharmaceuticals . . . cosmetics . . . precision tools . . . and items of endless variety can show impressive increase in profits for you when you package them in sparkling Styron® vials. Here's how:

Because Styron vials are mass produced in a wide range of sizes, their uniformity is assured and their cost is low. They're available from stock molds in any quantity . . . in any size you need . . . crystal-clear or in eye-catching color . . . and they can be used with all types of conven-

tional closures. Moreover, your attention-getting sales message can be printed right on the vials as they are manufactured . . . and eliminate costly labeling operations. Lightweight Styron will effect important savings for you in packing and shipping, too.

Here is your opportunity to increase unit sales and cut costs at the same time. Package your items in Styron vials! Dow will be glad to help . . . write today. THE DOW CHEMICAL COMPANY, Midland, Michigan, Plastics Sales, PL 453U.

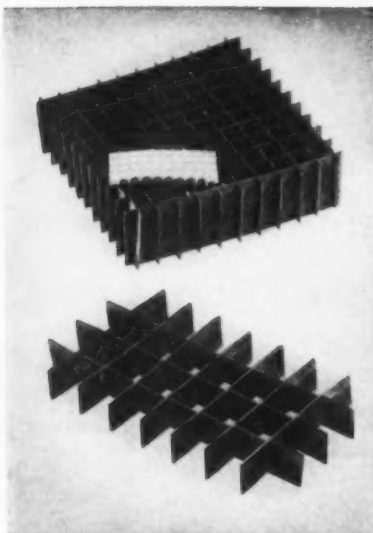
THE DOW CHEMICAL COMPANY, MIDLAND, MICHIGAN, PLASTICS SALES, PL 453U

Please send me your latest catalog featuring STYRON PACKAGING.

Name \_\_\_\_\_ Company \_\_\_\_\_ Street \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_ Product to be packaged \_\_\_\_\_

*you can depend on* DOW PLASTICS





## PROTECT WITH PARTITIONS!

Solve YOUR  
Internal Packaging Problems  
**SAFELY—SECURELY!**

Made to Your  
Exacting Specifications  
for Pharmaceuticals  
Candy  
Heart Box Inserts  
Collapsible Tubes  
Toys and other fragile items

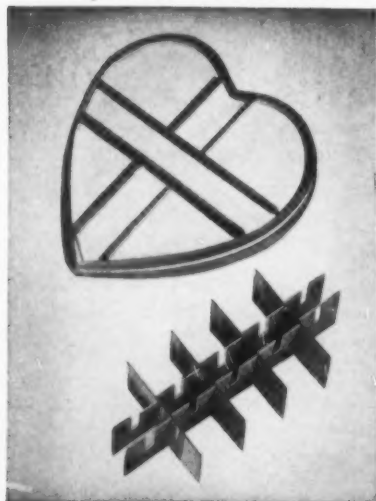
**Plain and Die Cut**

Prompt Delivery  
Write or Call for Complete Data

# RAPID CUTTING CO., INC.

90-96 ENGERT AVE.  
BROOKLYN 22, N.Y.

Evergreen 8-2512-3-4  
(Formerly at 169-173 Franklin Ave.)



## For your information

templated, will be assigned to membership activities and liaison with the society's chapters. Additionally, an expansion of services to membership along several lines is planned for 1954. Date for the 1954 SIPMHE Exposition and Short Course is Sept. 28-30, in Chicago.

The Lithographic National Assn. has set March 1 as the closing date for entries in the 4th Lithographic Awards Competition. The competition, which will be judged on the basis of lithographic quality, design and art, and functional value, is open to all members of the lithographic industry, buyers and producers of lithographic material and any person or organization connected with its design and production. Lester Beall, New York industrial designer, has produced the entry blank and announcement brochure on the competition and exhibit. Mr. Beall has also been selected to design the 4th Awards Competition Catalog in which the prize-winning material will be reproduced.

Growth of the activities of the Packaging Institute has necessitated an expansion of its quarters for the second time since 1947. The address, 342 Madison Ave., New York, remains the same, but the institute is now occupying larger facilities on the 15th floor. Telephone number, Vanderbilt 6-5847, remains the same.

Chairman of the program committee for the institute's 16th Annual Forum, to be held at the Hotel Roosevelt, New York, Oct. 25-27, is Frank W. Cray of International Printing Ink. Last year's Forum, with a registration of 1,135, was the biggest to date; the 1954 goal is for a registration of 1,500.

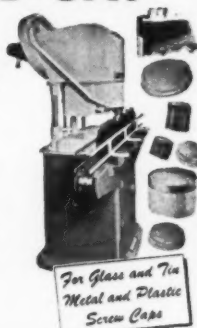
A scholarship fund of \$1,000 has been presented to Pratt Institute by Francis Blod, winner of the Package Design Council's 1953 competition. The funds will be available to juniors returning for their fourth year who show interest and ability in package design. The fund was presented during a recent PDC meeting, at which Jim Nash was re-elected as president of the council.

Prospective 1954 markets for nailed wooden boxes and crates and an analysis of business conditions as they affect the industry highlighted the 55th annual meeting of the National Wood Box Assn. last month in Chicago. A special feature of the meeting was an ammunition-box conference attended by NWBA divisional members and officers, as well

## MODERNIZE SCREW CAPPING OPERATIONS with the FULLY AUTOMATIC "TITE-CAP"

### SCREW CAPPER

Submit Sample  
Containers  
and Caps  
for Prompt  
Introduction to  
A Gift-Edged  
Investment!



- Quick Change-Overs; Easy Adjustments.
- Trouble-Free; Any Handy-Man Services It.
- Performs the Work of 2 or 3 Men.
- Increased Output, Automatic Operation. Pay for the "TITE-CAP" in about 6 months.
- New Hopper Handles Large Variety of Caps.
- Models for all Types of Capping Operations including Special Closures, Inner Seals, Lids, Plugs, Etc.

**TITE-CAP MACHINE CO. INC.**  
56 Rose St., New York 38, N. Y.

## "SCIENTIFIC" portable SEMI-AUTOMATIC STRAIGHT LINE VACUUM FILLER



- Fills Directly from Drum; No Overhead Tanks Required.
- Vials to Quarts, Glass or Tin.
- Up to 10 Spouts for Small Containers.
- Quick Change-Overs. Cleans Itself. 5 Minutes.
- ONLY ONE OPERATOR for Loading and Filling.
- LOW PRICED BENCH and STAND MODELS.

Actually Pays For Itself in A Few Weeks  
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## For your information

as representatives of ordnance plants and military agencies.

The Plastics Div. of Celanese Corp. of America, 180 Madison Ave., New York 16, has published a 16-page illustrated semi-technical booklet designed for injection and extrusion molders. The booklet points out that Celanese acetate molding materials are available in six different formulation series compounded to meet a range of ASTM flow characteristics. The different formulations permit a wide range of physical properties. Titled "Celanese Molded Plastics," the booklet is available on request to Celanese Corp.

The company has also published "Celanese Acetate Sheet and Film," a four-page folder discussing the principal markets for those two materials. Included in the folder is a table of the properties of acetate films and sheeting. For copies, write to Celanese Corp.

The sixth annual meeting of the Technical Assn. of the Graphic Arts will be held May 10-11, Schroeder Hotel, Milwaukee. The association will present a group of outstanding researchers who will describe recent advances in the printing industry. The meeting will serve as a source of information for graphic-arts workers in all fields and provide an opportunity for the discussion of technical problems. Richard Shaffer of Pratt Institute is TAGA president and George Hammer of Forbes Lithograph Mfg. Co. is secretary-treasurer.

The Danish Institute of Packaging will hold a packaging exhibition next May in Copenhagen. The Institute is a neutral institution founded by producers and consumers of packaging whose aim is better packaging. The exhibit, part of a large national exhibition on Commerce and Production, will show various packaging problems and how these problems have been solved. Self-service packages from all countries in Europe will be on view and the Institute would like to have a display of well-designed self-service packages from the United States. Anyone desiring to have packages exhibited are requested to send them to The Danish Institute of Packaging, Julius Thomsensgade 3B, Copenhagen V, Denmark. All material must be received by March 15.

The First National Forum of the Technical Institute of the Packaging Assn. of Canada is scheduled for Feb. 25 at the King Edward Hotel, Toronto. Objective of the one-day forum is to explain the

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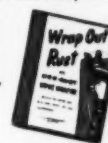
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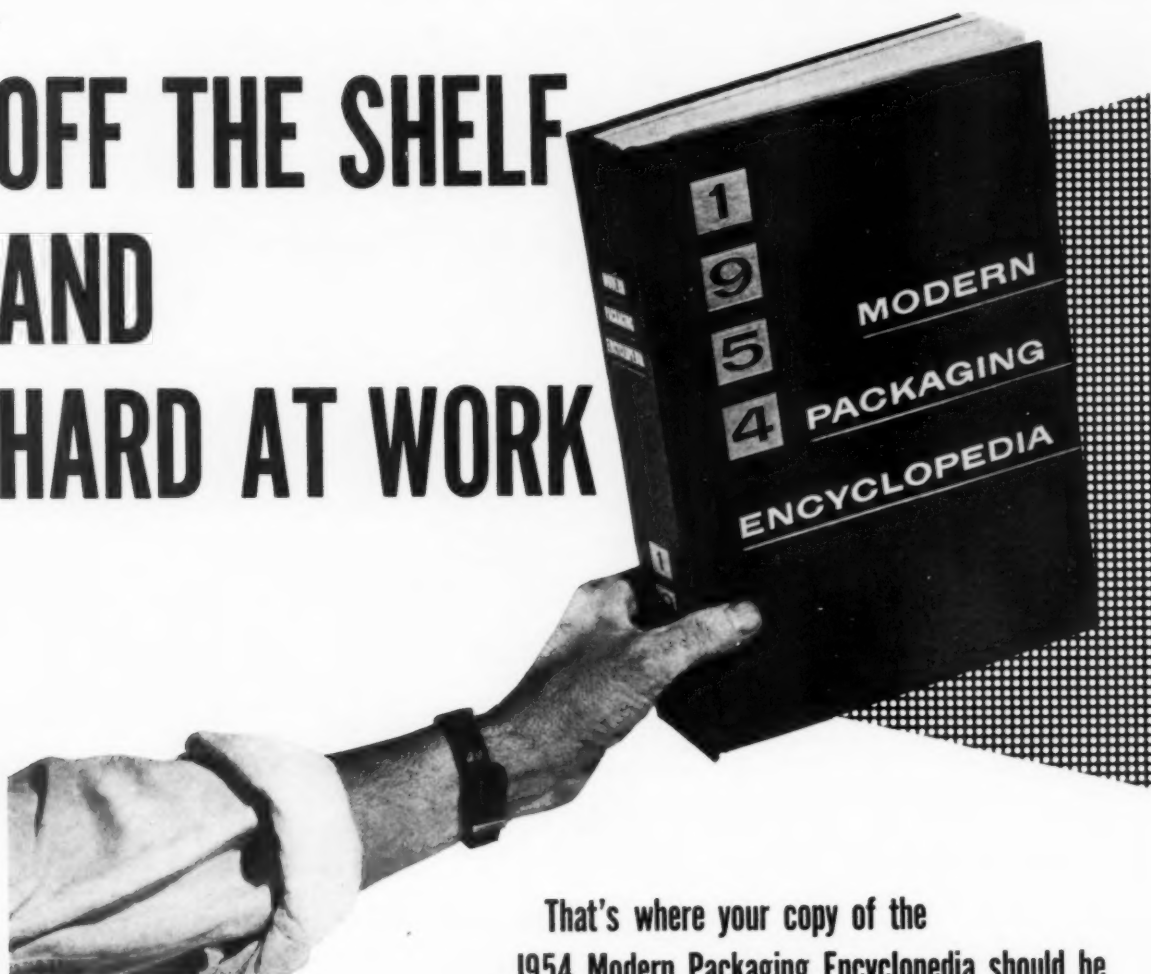
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## For your information

newest trends in packaging research and to promote better packaging techniques in the various consumer and packaging trade groups. Emphasis will be on technical developments rather than sales. Some 500 delegates from every province in Canada are expected to attend.

**The Rhinelander Paper Co.**, Rhinelander, Wis., has published a 24-page illustrated booklet entitled "Fifty Years of Paper-making" to commemorate the company's 50th anniversary. The book reviews the activities of the company since its beginning in 1903, tells of its current activities and outlines plans for the future.

A booklet entitled "We Are People Who Help Each Other" issued by the **Packaging Institute** tells what the Institute is, what it does and how it operates. Copies may be obtained from **L. V. Burton**, executive director, Packaging Institute, 342 Madison Ave., New York 17.

The fourth **Materials Handling Conference** of Purdue University, co-sponsored by the Indianapolis chapter of the **American Materials Handling Society**, is scheduled for Feb. 17-18. **George Smith** of International Business Machines Corp., AMHS president, is keynote speaker and general chairman is **Prof. Harold T. Amrine** of Purdue.

**Purdue University** is presenting a four-week **Institute for Packaging Personnel** to include classes, field trips and panel discussions covering materials, testing, design and specific packaging problems. Divided into separate two-week sessions, the Institute offers three enrollment dates: Feb. 8-19 to continue April 5-16; March 1-12 to continue May 3-14; Mar. 22-April 2 to continue May 17-28. Cost of the course is \$150. Additional information is available from **Mart I. Fowler**, Chairman, Div. of Adult Education, Engineering Administration Bldg., Purdue University, Lafayette, Ind.

**E. I. DuPont de Nemours & Co., Inc.**, Wilmington, Del., has announced a \$238,500 fund for grants to universities and colleges to advance the teaching of science. The new development consists of four separate plans: \$100,000 to advance the teaching of chemistry in colleges, \$73,000 for postgraduate teaching fellowships in chemistry, \$25,500 for summer research grants for chemistry teachers in universities and \$40,000 for fellowships for master's degree training of high school science and mathematics teachers.

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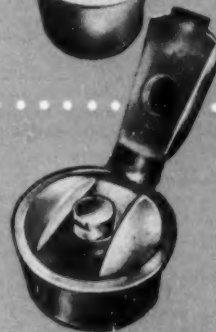
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# U. S. patents digest

*This digest includes each month the more important patents of interest to those who are concerned with packaging materials. Copies of patents are available from the U. S. Patent Office, Washington, at 25 cents each in currency, money order or certified check; postage stamps not accepted. Edited by H. A. Levey*

**Carton Set-Up Machine**, R. J. Fahey (to General Package Corp., a corporation of Delaware). U.S. 2,659,279, Nov. 17. Apparatus for erecting a collapsed, cellular, hinged, cross-partition-type egg carton, characterized by a tubular body having integrally hinged side wall, bottom and coplanar cross-partition-bearing panels, comprising means for advancing the egg carton endwise of said panels and means for progressively distending the tubular carton body to generally rectangular outline while so advancing.

**Glue-Dispensing Assembly for Envelope-Handling Machines**, W. R. Williamson, Independence, Mo. U.S. 2,659,280, Nov. 17. In an envelope machine having a continuously rotating gum-pot drum and a gumming drum, roller having a number of gumming cylinders engageable with the drum for rotation therewith when the gumming roller is adjacent the drum, an auxiliary roller including a shaft and a cylinder on the shaft for each gumming cylinder, respectively.

**Apparatus for Applying Hot-Melt Adhesive to Carton Blanks**, J. A. Zinn, Jr., Chicago, Ill. U.S. 2,659,340, Nov. 17. Apparatus for simultaneously applying a predetermined pattern of hot-melt adhesive to both sides of a paperboard carton blank, comprising a pair of heated intaglio rolls and means for depositing a thin film of adhesive heated to a thin liquid on the rolls.

**Closure**, A. E. Smith, Los Angeles, Calif. U.S. 2,659,372, Nov. 17. A closure comprising a body portion having a sleeve portion adapted to fit within a bottle neck, said sleeve portion having an axial recess therein, a container in said recess, said container having a recess therein, a diaphragm closure for the inner end of container recess, container closure disposed in said sleeve portion recess and engaging said container to close container recess, container closure having an axial hole therein.

**Stopper for Container Caps**, A. H. Jung (to Victor Industries Corp., Brooklyn, N.Y.). U.S. 2,659,510, Nov. 17. The combination with a bottle having an externally threaded neck and an end-closing wall across the top of the neck, wall having a central opening therein of lesser diameter than inner diameter of neck, of a relatively rigid bottle cap having an imperforate top wall and a dependent skirt provided with internal screw threads, a polyethylene insert having a distortable disk-like top and an elongated hollow distortable stopper closed at one end by a rounded solid tip and open at the other end to form a conical depression in the central part of the disk-like top.

**Sealing Machine with Automatic Labeling**, H. L. Reitzes (to Globe Products Heat Seal Corp., Los Angeles, Calif.). U.S. 2,659,520, Nov. 17. In a machine for sealing a bag and affixing a label thereto, a base, a first heated platen, a second heated platen, an electric motor adapted to run continuously, a pivoted lever, a first cam, a second cam, a one-revolution clutch operatively connected between motor and cams for driving cams, means to crease a bag and label simultaneously, means being adapted to insert said bag and label between first and second platens.

**Cap-Feeding Mechanism**, E. O. Ninneman, G. L. Webster, J. Hohl and O. Bjering (to Owens-Illinois Glass Co., a corporation of Ohio). U.S. 2,659,522, Nov. 17. An apparatus for feeding closure caps comprising a pair of cylindrical rolls spaced apart and mounted for rotation about their axes, means providing a channel for guiding a stack of closure caps between said rolls, the uppermost portion of each of said rolls being tapered upwardly and inwardly, thereby restricting the channel to facilitate travel of caps between rolls.

**Handled Carton**, J. A. McElwee (to The Ohio Boxboard Co., Ruttman, Ohio). U.S. 2,959,524, Nov. 17. In a handled carton, a body comprising a bottom-wall member, a top-wall member, said two side-wall members, each of said side-wall members carrying at each of its side edges a part of an end-wall member, end-wall parts being joined in pairs to each other and to the bottom-wall member by a gusset-folding member.

**Polygonal Box**, O. W. Wikstrom (to United States Automatic Box Machine Co., Inc.). U.S. 2,659,525, Nov. 17. In a folded paperboard box for use in dispensing package for sheet rolls, an elongated tubular hexagonal body for use in horizontal position, comprising an elongated rectangular horizontal bottom wall, lower front and lower back side walls continuously along and integral with the respective horizontal longitudinal edges of the bottom wall.

**Automatic Set-Up Carton**, K. T. Buttery (to Sutherland Paper Co., Kalamazoo, Mich.). U.S. 2,659,526, Nov. 17. A collapsible carton formed of an integral blank comprising hingedly connected side and end walls, opposed side bottom members hingedly connected to the side walls and of a length substantially corresponding to that of the side walls and of a width approximately one half that of the erected carton so that the bottom members complement each other and lie edge to edge when the carton is erected.

**Apparatus for and Method of Combining Enwrapments**, C. W. Vogt, Norwalk, Conn. U.S. 2,660,098, Nov. 24. Apparatus for assembling enwrapments which comprises a supporting surface to hold a plurality of separate enwrapments, a second supporting surface to hold a plurality of separate chaining elements, withdrawing means to withdraw successively individual enwrapments and means to move the withdrawing means continuously to advance the enwrapments in a predetermined path in spaced relation.

**Apparatus for Folding Wrappers**, R. M. Dunning (to Waldorf Paper Products Co., St. Paul, Minn.). U.S. 2,660,099, Nov. 24. An apparatus for forming a bag, including a form having a pocket therein, a mandrel movable into said pocket, said mandrel being operable to press a sheet into the pocket and a pair of opposed members mounted on said form adjacent to said pocket to engage the sheet along lines spaced from the ends thereof and to wrap the ends of the sheet.

**Method of Making Bags**, J. F. Doyle (to Arkell Safety Bag Co., New York, N.Y.). U.S. 2,660,100, Nov. 24. The method of forming a sleeve valve in a bag which comprises folding a sheet having a thermoplastic coating on the inner side thereof over the upper end portion of one of the longitudinal edges of the bag, applying heat and pressure to the portion of the sheet overlying the adjacent corner of the bag to cause the coating to secure said sheet adhesively over said edge and to the side walls of said corner.

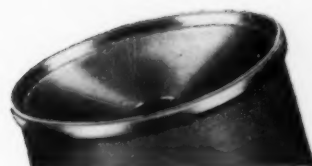
**Roll Support**, R. M. Dunning (to Waldorf Paper Products Co., St. Paul, Minn.). U.S. 2,660,296, Nov. 24. A pad for holding a hollow article including a paperboard body divided along a fold line into two foldably connected panels, a tab connected to one of said panels and extending beyond the line of fold into the other of said panels and a tab on other panel extending beyond the common line of fold into said one panel, tabs having substantially arcuate outer edges.

**Container with Rip-Strip Tongue Folded into Lock Seam**, J. Henchert (to Continental Can Co., Inc., New York, N.Y.). U.S. 2,660,332, Nov. 24. In a container, a body having a side seam formed at least in part of interlocked hooks and score lines extending about the body thereof at the position of said interlocked hooks and defining a rip strip, a winding key-receiving tongue extending from the defined rip strip and folded upon itself in and extending freely from the side seam.

**Apparatus and Method for Accurately Filling Containers**, P. R. Fehheimer (to The Karl Kiefer Machine Co., Cincinnati, Ohio). U.S. 2,660,350, Nov. 24. A process of filling containers which comprises introducing a liquid-filling substance into a container through a filling stem having a seal and comprising filling and exhaust tubes, said stem extending into the container and serving normally to determine a height of fill.

**Band-Appling Mechanism**, G. E. Gamp (to American Machine & Foundry Co., a corporation of New Jersey). U.S. 2,660,353,

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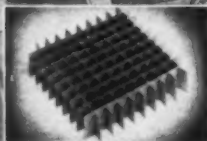
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## U. S. patents digest

Nov. 24. In a machine for applying a collapsible banding sleeve to a container, the combination with means for holding open a banding sleeve and a support for holding the containers in position to receive a banding sleeve.

**Filling Machine for Containers**, E. F. Rowekamp (to The Karl Kiefer Machine Co., Cincinnati, Ohio). U.S. 2,660,356, Nov. 24. In a filling machine, spaced sheaves and a substantially horizontal conveyor element passing over said sheaves to provide spaced, substantially straight-line flights, a straight-line conveyor for containers juxtaposed to one of said flights.

**Pressure and Vacuum Filling Machine**, P. R. Fechheimer (to The Karl Kiefer Machine Co., Cincinnati, Ohio). U.S. 2,660,357, Nov. 24. In container filling apparatus a head element formed to provide two chambers, one for filling material under pressure and the other for suction, at least one filling-spout structure associated with said head and provided with a seal to make a closed system with the container to be filled.

**Method and Apparatus to Supply a Beverage to a Filling Machine and Fill Containers Thereby**, F. T. Gricar, Jr., W. J. Sommers, and G. L. N. Meyer (to Geo. J. Meyer Mfg. Co., Cudahy, Wis.). U.S. 2,660,360, Nov. 24. The method of supplying a carbonated beverage from a tank to a filler bowl comprising maintaining gas in the filler bowl at a predetermined constant counter-pressure, venting gas in excess of said pressure, utilizing a valveless rotary positive-displacement pump to supply beverage from tank to filler bowl and maintaining the level of the beverage in the filler bowl substantially constant.

**Partitioned Carton**, W. J. Tyrseck (to Robertson Paper Box Co., Inc., Montville, Conn.). U.S. 2,660,361, Nov. 24. A blank for forming a partitioned folding carton comprising an aligned series of panels foldable to form a rectangular box structure and a pair of partition-forming panels hinged to the edges of two alternate wall panels, each such partition-forming panel being generally of the form of a slant parallelogram.

**Covered Tray**, P. A. Schilling (to Waldorf Paper Products Co., St. Paul, Minn.). U.S. 2,660,362, Nov. 24. A carton including a tray comprising a rectangular bottom panel and four right angularly arranged side walls connected thereto, means connecting said walls to hold said side walls in rectangular relation and a pair of flaps foldably connected to the upper edges of two opposed said side walls and co-extensive therewith.

**Collapsible Box Having Interlocking End Walls**, L. G. Trickett, Jr., and C. O. Deem (to Crook Paper Box Co., North Kansas City, Mo.). U.S. 2,660,363, Nov. 24. In a box, a bottom wall, a pair of opposed side walls and a pair of opposed end walls, each including a pair of overlapping inner flaps and an outer flap overlapping the inner flaps, there being a hinge connection for each side wall, respectively, joining the same integrally with the bottom wall, and having a hinge connection for each inner flap.

**Corner Lock for Corrugated Fibreboard Boxes**, K. C. Ferguson (to Anderson Box Co., Indianapolis, Ind.). U.S. 2,660,364, Nov. 24. In a fibreboard box structure formed from a blank to provide side and end walls, a corner lock for securing the adjacent ends of said walls in box formation, a tongue portion extending from the terminal edge of one of said walls having opposed laterally extending locking ears bendable thereon, each of said ears having its forward and lateral edge curved throughout the length to present a continuous camming face, a locking flap cut from a tongue-receiving locking opening in adjacent wall with one end thereof hinged thereto at its far side from said tongue.

**Closing Machine with Rectangular Container Squaring and Debulging Devices**, J. T. Livacick and E. W. DeGear (to American Can Co., New York, N.Y.). U.S. 2,660,936, Dec. 1. In a machine for attaching covers to rectangular can bodies, the combination of feeding devices for advancing a can body along a predetermined, substantially straight path of travel, a movable centering ring disposed adjacent one side of path of travel for holding a cover in spaced relation to an advanced can body for application thereto.

**High-Pressure Container with Adapter for Discharge Apertures**, E. H. Benson, Kansas City, Mo. U.S. 2,661,113, Dec. 1. In a container for pressurized fluids having a neck-like projection provided with an internally threaded aperture extending axially therethrough and communicating with the interior of the container, an adapter for neck-like projection comprising a tubular



box being threadedly inserted in aperture and having an enlarged head bearing tightly on outer end of said projection.

**Container and Closure Therefor**, N. E. Speiss, Jr., and E. M. Gropen (to National Dairy Research Laboratories, Inc., Oakdale, Islip, N.Y.). U.S. 2,661,119, Dec. 1. A container and closure therefor comprising a container body having front and rear walls, at least one aperture in the rear wall of the container body, said aperture having a notch in at least one side thereof, a closure for the container having a flange on the bottom side thereof adapted to be received in said aperture.

**Tamperproof and Sealproof Flexible Pouring Spout**, I. H. Rieke (to Rieke Metal Products Corp., Auburn, Ind.). U.S. 2,661,128, Dec. 1. A sealing closure for a container having an opening therein defined by an upstanding exteriorly grooved flange, including a flexible self-restoring and resilient tubular pouring spout having an enlarged anchoring end comprising an outwardly extending gasket portion seatable over said flange and a locking ring U-shaped in cross section.

**Counting and Dispensing Machine**, E. C. Clement (to United States Automatic Box Machinery Co., Inc., Boston, Mass.). U.S. 2,661,133, Dec. 1. A pill-dispensing machine comprising a plurality of transversely extending pill-conveying slats having pill pockets therein, said pill pockets being formed by openings extending part way through slats and a hopper adapted to containing a supply of pills.

**Filling and Closing Machine**, L. McGihon (to King Sales & Engineering Co., San Francisco, Calif.). U.S. 2,661,134, Dec. 1. In a can-filling and closing machine, a filling station including a filling valve, a lid station including a lid feeder, a closing station including a cyclically operable lid seamer and normally inactive drive means therefor.

**Container**, G. C. Reid and S. S. Jacobs (to American Can Co., New York, N.Y.). U.S. 2,661,137, Dec. 1. A fibre container for liquids comprising a tubular body having a marginal edge portion at its upper end extending outwardly and downwardly, then up to provide an annular depending channel around body.

**Article Carrier**, E. L. Arneson (to Morris Paper Mills, Chicago, Ill.). U.S. 2,661,140, Dec. 1. An article carrier fabricated from flexible paperboard stock and comprising opposed pairs of side and end walls, a bottom extending between side walls, a longitudinal partition disposed medially between side walls and hinged to one of said end walls, said partition comprising a longitudinally extending panel having a cross partition element connected thereto on an integral vertical hinge located in inwardly spaced relation to an end thereof.

**Shipping Container with Carrying Handle**, J. W. Hendrickson, Jr. (to Container Corp. of America, Chicago, Ill.). U.S. 2,661,142, Dec. 1. In a hand-carried type of carton composed of a single piece of blank material such as paperboard, so cut and scored that when folded it includes a flat, continuous, one-piece upper wall and connected adjacent wall portions extending downwardly at each of the opposite side edges of upper wall.

**Carton**, W. H. Inman (to Bloomer Bros. Co., Newark, N.Y.). U.S. 2,661,143, Dec. 1. A carton comprising a one-piece blank cut, scored and folded to form bottom, front and back walls and a cover, end flaps on said walls and cover for closing the ends of the carton, cover having at its free edge a securing flap foldably hinged thereto along a score line therebetween and adapted to be folded over the upper portion of the front wall in overlapping relation and adhesively secured thereto.

**Box Construction**, W. Stastny and P. Kostelancik (to Lanzit Corrugated Box Co., Chicago, Ill.). U.S. 2,661,890, Dec. 8. A box fabricated from two like halves, said halves each comprising a substantially rectangular sheet, a score line in each sheet parallel and spaced inwardly from one of its longitudinal edges to define a main panel and a side panel on one edge thereof.

**Carton**, E. V. Arranga and A. J. Malley, Syracuse, N.Y. U.S. 2,661,891, Dec. 8. A carton, comprising a body composed of a flat bottom member having end members foldable upwardly therefrom to a position perpendicular thereto, flexible cover members laterally extended from the respective opposite sides of the bottom member and foldable over the adjacent end members and foldable flaps on the free edges of the cover members adapted to be interlocked with the end members.

**Bag and Handle**, G. D. King (to Crown Zellerbach Corp., San Francisco, Calif.). U.S. 2,661,892, Dec. 8. As an article of manufacture, an open-topped bag formed of paper-like sheet material having two opposite side walls and a handle and closure member secured to the outer face of one of said side walls adjacent the top of said bag.



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In a variety of industries, time-wasting wrappings and costly boxes are being replaced by envelopes designed to do the job faster and more economically. Stanley Roto-Mops and Dremel coping saw blades are two examples of merchandise which once required hand wrapping... but which are now "wrapped" in envelopes that seal at a touch without moisture or special equipment.

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Unusual envelope designs and new types of closures open unlimited opportunities for achieving important savings on packaging and shipping operations. An expandable, gusseted envelope is doubling as a "box" shipping container. A unique wafer-thin envelope snap fastener permits repeated openings and closing. Objects of every size, from small cogs to car grills, are today being packaged more efficiently in envelopes.

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*World's Largest Manufacturer of Envelopes  
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Springfield, Massachusetts

Please send samples and full details of your ideas  
for packaging our \_\_\_\_\_

(mention product)

TITLE \_\_\_\_\_

NAME \_\_\_\_\_

FIRM \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_

ZONE \_\_\_\_\_ STATE \_\_\_\_\_

- ① SELECT the items you want
- ② CIRCLE the corresponding numbers on the post card
- ③ FILL IN the information requested
- ④ MAIL — no postage required

## HELPFUL LITERATURE *FREE*

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### EQUIPMENT • SUPPLIES • SERVICES

**POLYETHYLENE PACKAGING MATERIALS.** Folder lists the advantages of polyethylene bags, tubing, and drum and carton liners extruded and fabricated by Poly Plastic Products, Inc. (B-451)

**COFFEE PACKAGING MACHINES.** Data on ten fully-automatic machines for packing and sealing coffee into bags ranging in size from 2 ounces to 3 pounds, at speeds from 25 to 70 packages per minute. Fr. Hesser. (B-452)

**HEAVY DUTY SHEETER.** Data on the Clark-Aiken Type H high-speed heavy duty Cutter-Layboy Unit for cutting heavy board, or for sheeting from multiple rolls of paper, at speeds as high as 800 feet per minute. The Clark-Aiken Co. (B-453)

**TUBE FILLING MACHINE.** Bulletin on the Arenco tube filler which offers such features as choice of bottom closure styles, tube cleaning, cap tightening and the like, and filling speeds up to 55 per minute. Arenco Machine Co., Inc. (B-454)

**ARCULATE WIRE STITCHING.** Bulletin explains how a wire stitching machine puts an arc in a cross-section of flat wire and then drives and clinches the stitch at high speed. This arcuate method cuts wire costs, reduces machine down time and makes neater looking boxes. Acme Steel Co. (B-455)

**METALLIC PAPERS.** Swatch book contains samples of 15 non-tarnishing waterproof paperboard and paper stocks with gold, silver, and copper pyroxylin coatings in plain and embossed designs. Artcoote Papers, Inc. (B-456)

**AUTOMATIC CONTROL WITH VARIABLE SPEED DRIVES.** Booklet describes Reeves variable speed drives and automatic control units for controlling tension, acceleration and deceleration, velocity and peripheral speed, synchronization of one or more machines, and maintaining uniform temperature and pressure. Reeves Pulley Company. (B-457)

**POLYVINYL ACETATE FILMS.** Technical bulletin tells how "Pycal" plasticizer can be used to improve the quality of polyvinyl acetate emulsions used as pressure sensitive adhesives, aluminum foil adhesives, cellophane and cellulose acetate adhesives and other similar applications. Atlas Powder Co. (B-458)

**WRAPPING AND BUNDLING.** Methods of operation of a dual purpose rotary bundling machine which wraps and seals groups of cartoned commodities automatically in any type of coated paper, heat sealing cellulose film, or glassine. Ayers & Grimshaw, Ltd. (B-459)

**PLASTIC BOXES.** Diagrammed booklet lists dimensions of 111 high-luster rigid plastic boxes molded from polystyrene and available in a complete range of colors including transparent. Bradley Associates. (B-460)

**DRUM LABELLING.** Bulletin describes the operation of a unit for applying heat seal labels to the surface of metal, wood, paper or fiber drums in a single stroke. The Lakso Co., Inc. (B-461)

**CELLOPHANE.** Manual of successful methods for pre-packaging self-service meats in cellophane includes information on its promotional and display advantages and contains data on the techniques and materials used. Canadian Industries, Ltd. (B-462)

**VENTILATED FILM.** Details on the advantages of using "Respiro-Pak" ventilated film for pre-packing of produce. Cello-Masters, Inc. (B-463)

**STEEL STRAPPING.** Booklet tells of the progress of tensional steel strapping from its crude beginnings to its use today in modern push-button factories. Illustrates many of the jobs steel strapping can do, plus the facilities for its manufacture by Signode Steel Strapping Co. (B-464)

**"CELLUSUEDE" FLOCK.** Bulletin includes a description of decorative "cellusuede" flock fiber and its uses, plus data on adhesive selection and methods of application. Also contains schematic drawings and reference chart of physical properties. Cellusuede Products, Inc. (B-465)

**PNEUMATIC VIBRATORS.** Catalog features a line of pneumatically-operated bin and hopper vibrators and vibrating tables for assuring positive filling in many packaging operations. The Cleveland Vibrator Company. (B-466)

**INDUSTRIAL PACKING WITH SOUTHERN HARDWOODS.** Pamphlet outlines the characteristics of the more important southern hardwoods used for boxing and crating. Includes grade recommendations of value to box and crate manufacturers and industrial container users. Southern Hardwood Producers, Inc. (B-467)

**AUTOMATIC CELLOPHANE BAG MACHINES.** Bulletin on Simplex automatic bag making machines for cellophane and other heat sealable materials. Gives information and specifications on five models, including two each for folded and crimp bottom bags and one designed for extra large bags. Data on a tear tape applicator and other attachments. Simplex Packaging Machinery, Inc. (B-468)

**STRETCHABLE PROTECTIVE PACKAGING MATERIALS.** Brochure describes a wide range of packaging uses for two Kraft products — "Corrucrepe," creped and corrugated for stretch in every direction, and "Elastikraft" deep-crinkle creped for flexible utility protection. May be used as interleaving, cushioning, barrel liners, etc. Cincinnati Industries, Inc. (B-469)

**SILICONE ADHESIVES.** Data on silicone pressure sensitive tapes which remain pliable and retain their adhesive strength over a wide temperature range, give good adhesion to metals, glass, fabrics, polyethylene, "Teflon" and other materials. Dow Corning Corp. (B-470)

**GLUE DISPENSER FOR MAKING WATERPROOF CASE LINERS.** Data on the use and operation of the "Fibro" hand glue dispenser for making waterproof case liners with light or heavy Specification JAN-P-140 waterproof glue. Fibroco-Illinois Corp. (B-471)

**AUTOMATIC PROPORTIONING BAGGING SCALES.** Data on three automatic bagging scale set-ups which are suited to the bagging of fertilizers and other corrosive substances which may require proportion filling. Richardson Scale Co. (B-472)

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**ALL PLASTIC FLEXIBLE ZIPPER.** Data sheets suggest several applications for a flexible plastic toothless zipper which may be heat sealed to plastics sheeting. Flexi-Grip, Inc. (B-473)

**GLASSWARE FOR DRUGS.** Illustrated catalog gives complete purchasing data on company's "Moderno" line of vials, applicator bottles, powder and ointment jars and closures designed particularly for pharmaceutical products. Foster-Forbes Glass Co. (B-474)

**LABEL TROUBLESHOOTING.** MODERN PACKAGING reprint explains the advantage of perfect labeling and lists common labeling difficulties and their remedies. Federal Adhesives Corp. (B-475)

**FOLDING CARTON STYLES.** Booklet illustrates 34 different styles of folding carton construction plus several additional patented variations. Check list of points to be considered when developing and ordering cartons. Robert Gair Co. (B-476)

**ROTOGRAVURE PRESS.** Folder on the ATF-Klingrosch Pendulum Action Impression Press for producing large volume multi-color labels, wraps and specialties by rotogravure printing of paper, cellophane, laminated foil, and glassine, and board up to 20 point. American Type Founders. (B-477)

**MANUAL ON PRESSURE PACKAGING.** Manual discusses products which may be successfully packaged in pressure-dispensing cans, how products are pressure propelled, loading, types of cans, propellants, valves, can specifications and ICC regulations. Crown Can, Div. of Crown Cork and Seal Co. (B-478)

**SILK SCREEN JIG FOR PACKAGE DECORATING.** Specifications on three sizes of the "Sparky Jig," a low cost jig for screen process printing on cylindrical containers. Photo Process Screen Mfg. Co. (B-479)

**AUTOMATIC PACKAGING IN "TRANSWRAPS."** Booklet on the packaging of solid, semi-liquid, liquid, powdered and granular products in various types of film, foil and paper packages which are formed and filled automatically and simultaneously. Information on the operation of "Transwrap" machines, imprinting, gas-filling, etc. Transparent Wrap Machine Corp. (B-480)

**FOIL PRODUCTS.** Booklet explains the requirements for rolling high quality aluminum foil, and illustrates the facilities for meeting them at Republic Foil & Metal Mills, Inc. (B-481)

**CUTTER-CREASER FOR CARTONS.** Bulletin gives full operational details on a new high-speed machine with rated output up to 10,500 cartons per hour. Data includes complete specifications, mechanical description as well as charts and diagrams. Champlain Co., Inc. (B-482)

**ETHYL CELLULOSE LACQUERS FOR SPECIALTY COATINGS.** Data on the use of ethyl cellulose for specialty coatings. Includes formulations for solvent and hot melt adhesives, strip coatings, and paper lacquers. Hercules Powder Co. (B-483)

**PACKAGING WITH "GEON" VINYL RESINS.** Eight case histories show how vinyl resins are used to protect packages from grease and moisture, to increase abrasion resistance and to perform other packaging functions. B. F. Goodrich Chemical Co. (B-484)

**PAPER SHIPPING SACK MANUAL.** Manual on single and multi-wall paper shipping sacks. Covers types available, storage, closure, palletizing, freight-loading, unloading, repairing, emptying and other important subjects. Paper Shipping Sack Mfrs. Association. (B-485)

**LABELER AND IMPRINTER.** The portable power-driven "Thermo-Print-Labeler" which cuts, imprints, and applies labels from economical roll stock is discussed in a brochure released by National Bread Wrapping Machine Co. (B-486)

**CONTAINER TESTING.** Information on the complete laboratory service for testing containers and materials, packaging research, package design and specifications, and quality evaluation programs. Container Laboratories Inc. (B-487)

**LABEL CUTTER.** Brochure discusses the "Strong" semi-automatic label cutter design to die cut labels and similar products directly from plain or printed sheets. Hobbs Mfg. Co. (B-488)

**"PONY LABELRITE."** Data on the various types of containers which can be handled by this versatile labeller and the many different labelling jobs it can do. Complete specifications included. New Jersey Machine Corp. (B-489)

**INDUSTRIAL MARKING EQUIPMENT.** In addition to describing company's line of industrial marking and carton printing equipment, this booklet contains an instruction manual outlining techniques for ink selection and equipment operation. Industrial Marking Equipment Co., Inc. (B-490)

**"VELVA-GLO 40."** Price list and printed samples of this light-weight fluorescent paper for box covers, labels, gift wraps and other packaging assignments. Radiant Color Co. (B-491)

**PACKAGING MACHINES.** Brief specifications of 39 "MFM" semi and fully automatic machines for performing a wide range of functions including tube filling and closing, tablet packaging, cartoning, cellophane wrapping, powder filling, counting, unit packaging, and bag filling. Industrie-Werke Karlsruhe. (B-492)

**"THE MARKEM STORY."** Booklet traces the history and illustrates the manufacturing facilities of this company. Depicts the various types of marking and imprinting machines made for use on paperboard, fabrics, plastics, ceramics and other materials. Markem Machine Co. (B-493)

**AUTOMATIC PACKAGER AND PRINTER.** Folder describes and illustrates the "Packmaster" Model 50 which counts, imprints and packages items in a square, flat, heat-sealed flexible container either singly or in "accordian" foldable strips. Packmasters, Inc. (B-494)

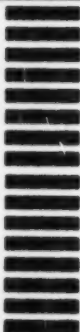
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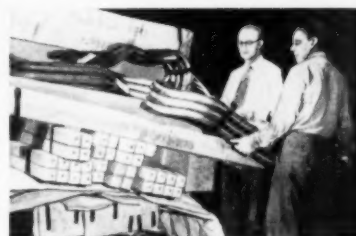
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**REINFORCE CONTAINERS** with short strips of "Scotch" Brand Filament Tape. Sticks tight. The powerful "mirror-surface" adhesive *puts all the tape strength to work.* There's full value in every inch of filament tape.



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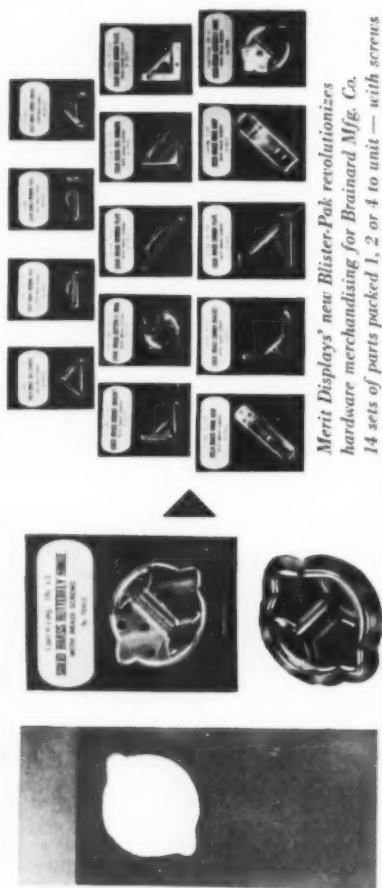
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- Transparent vacuum-drawn plastic, formed to the shape of your product
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Merit Displays' new Blister-Pak revolutionizes hardware merchandising for Brainard Mfg. Co. 14 sets of parts packed 1, 2 or 4 to unit — with screws

## Polyethylene for citrus

(This article continued from page 138) softening of the rind. At high temperature the film also helped maintain green color in limes by retarding gas exchange. Decay at high temperature was more serious in fruit packed in the polyethylene containers than in fruit packaged in the open trays or mesh bags.

Therefore, it is important to pack only sound, vigorous fruit, especially when film is used for packaging. Rapid turnover is also essential unless the fruit is refrigerated. This is suggested by the rapid deterioration of some lots soon after three days' holding at 70 deg. F.

The presence of slightly more decay and the poor acceptability of orange juice extracted from fruit packed in non-perforated polyethylene bags indicate that perforation is essential.

The accumulation of carbon dioxide and depletion of oxygen in 5-lb. bags perforated with only two 1/4-in. holes were probably due to blockage of these holes by fruit. Two holes were adequate in the film-wrapped trays and no carbon-dioxide build-up or oxygen depletion was noted. In no case was there carbon-dioxide build-up or oxygen depletion in the polyethylene bags perforated with eight 1/4-in. holes. Using as many as 16 or 32 holes per bag served no useful purpose and tended to weaken the bag strength.

### Summary and conclusions

Approximately 1,500 packages of the various citrus fruits (oranges, grapefruit, lemons and limes) were used in tests comparing shelf life, decay, weight loss, appearance and juice flavor of fruit packaged in non-perforated or perforated polyethylene film and in mesh bags or unwrapped open chipboard trays. Inspections were made after three and seven days' holding at 46 deg. F. and 80% relative humidity, 70 deg. and 80% relative humidity and 70 deg. and 50% relative humidity.

At 46 deg. F. and 80% relative humidity the fruit held up well for the full seven days. Practically no decay and little weight loss were noted and yellowing of limes was prevented. Weight loss was far greater in the checks (unwrapped trays or mesh bags) than in the film-packaged fruit,

giving the latter a slight advantage in keeping quality.

At 70 deg. F. the fruit in general held up well for three days. Weight loss with loss of fresh appearance was an important factor in determining shelf life, especially in the mesh-bag or naked lots, at low humidity, where as much as 1% or more weight loss per day was recorded. Little weight loss was found in film-enclosed lots. Decay varied between tests, but in general it was higher in the polyethylene-overwrapped or polyethylene-bagged lots than it was in the check lots.

Two holes, although satisfactory for the overwrapped trays, proved inadequate for the polyethylene bags. Eight 1/4-in. holes were sufficient to ventilate the 5-lb. bags. Packing in non-perforated film adversely affected the flavor of orange juice (as did the presence of penicillium rot even in the ventilated polyethylene and mesh packages). Although the flavor of the grapefruit, lemons and limes was not affected by packaging in non-perforated film and holding for seven days in these tests, more severe holding conditions may necessitate perforation of the film to avoid off-flavors developing in the fruit.

Tight enclosures helped maintain green color in limes, but resulted in more decay and is therefore of questionable value.

On the basis of these tests, polyethylene was found to be a satisfactory bagging or wrapping material for citrus fruit when sound, vigorous fruit was packed and moved fairly rapidly through the retail channels. Perforation of bags with at least eight holes was beneficial. Holding at 46 deg. F. prolonged the shelf life of the fruit by at least four days when compared with holding at 70 deg.

### References

1. Hruschka, H. W., and Kaufman, J., 1951. Market Prepackaging Tests with Lemons, U. S. Dept. Agric., H. T. & S. Office Report No. 261. (Also MODERN PACKAGING 25(9): 155-159, 1952, and Pre-Pack-Age 5(7): 20-24, 1952.)
2. Rygg, G. L., 1951. Shipping in Bags. Citrus Leaves 32(9): 12-14.
3. Winston, John R., Meckstroth, G. A., and Roberts, G. Lee, 1949. 1950. Handling and Shipping of Prepackaged Florida Oranges. Pre-Pack-Age 3(4): 5-10; Pre-Pack-Age 3(5): 29-31.



## THESE WINDOWS GIVE ENVELOPES More Serviceability, Longer Shelf Life

Packages of Christmas seals and tags are made up months ahead of the holiday season. Stores often carry them over from one year to the next. Shoppers give them a lot of handling.

But with windows of BAKELITE Vinyl Plastic Cast Film, they always look fresh. There's no discoloration, cracking, or aging. Clarity is unsurpassed. The tough, flexible film keeps contents safe while enhancing sales appeal.

Used to package hard, bulky contents like nuts and bolts, it withstands contact with their rough edges and sharp corners. It can be heat-sealed to form a strong, lasting closure. It's resistant to moisture, gases, grease, and chemicals. Laminating BAKELITE Vinyl Plastic Cast Film to foil provides a combination of toughness, attractiveness, and sealability. A special formulation is odorless and tasteless.

You can get all these features for your package by using BAKELITE Vinyl Plastic Cast Film. Learn more about it by writing Dept. SR-55.

Data courtesy Dennison Manufacturing Co., Framingham, Mass.

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## VINYL PLASTIC CAST FILM



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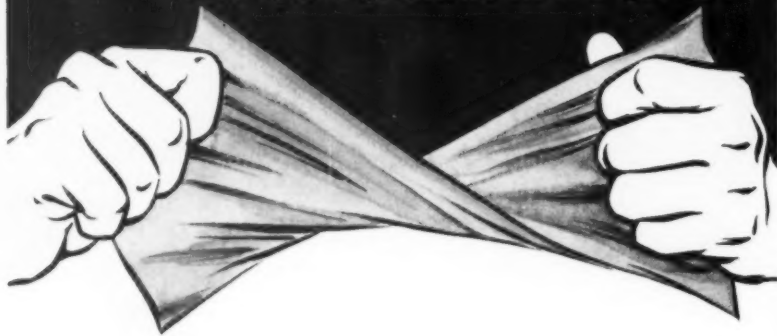
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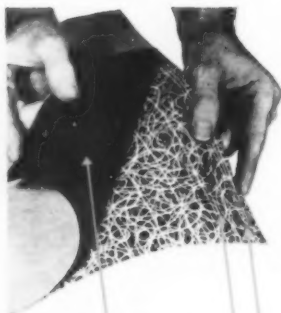
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STURDY 30 LB. KRAFT  
COATED WITH ASPHALT  
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EVENLY FORMED  
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New, dispersed fibre reinforcing for unusual toughness and strength — plus machine creping for extra flexibility and cushioning... That's the combination that makes Thilco's type MR and JR asphalted waterproof papers your best bet for economical, heavy-duty protective wrapping. With Wrap-Dri you get *three-fold* packaging superiority —

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## Simplified selling

Self selection as a profitable method of department-store merchandising received special note at the 43rd National Retail Dry Goods Assn. convention held recently in New York. Valentine G. O'Connell, assistant manager of operations and packaging for L. Bamberger & Co., Newark, N. J., outlined the purpose of the technique as: (1) to give better service, (2) to increase business by faster turnover and (3) to save salary expenses. Packaging in cellophane at the retail level, Mr. O'Connell claimed, in addition to protecting and enhancing the merchandise, promotes larger unit sales, mixes fast- and slow-moving colors and styles, and reduces soilage and mismates.

Robert K. Farrant, merchandising manager of the *Saturday Evening Post*, demonstrated how department stores across the country have successfully adopted the simplified selling technique. James H. Pickering, vice president of Amos Parrish & Co., emphasized that use of the system must be measured against the character and structure of the store itself. An evaluation of simplified selling for the glove and hosiery departments of a member store of the Allied Purchasing Corp. was presented by William J. Caddelle.

## Meat packaging

(This article continued from page 134) with a moistureproof film. Casings made of Pliofilm, Visten and saran are moistureproof and protect the meat from shrinkage.

## Conclusions

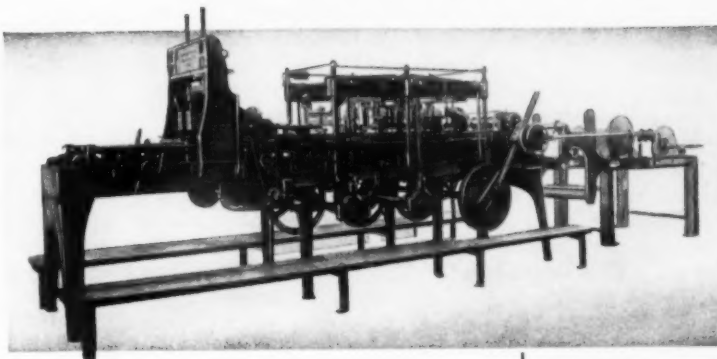
In conclusion, it is recognized that there are many factors other than protective requirements which must be taken into consideration when selecting packages for various meats.

The final selection of a package for a particular product depends not only on the factors discussed in this paper, but also upon the durability of the packaging material, its adaptability to high-speed printing in multiple colors, its adaptability to different packaging operations including freedom from blocking and satisfactory performance on high-speed packaging machines, its freedom from toxicity, its merchandising characteristics and, finally, its availability and cost.



***It's adjustable . . . it's automatic . . .***

## **INMAN TRAY MACHINE FOR SET-UP BOXES**



When dependable output must be coupled with flexibility and rapid changeover, it is a perfect situation for the No. 9 Adjustable Die Tray Machine.

Working from a roll of the proper width, it dies out, creases, pastes, and sets-up one piece at a time. Production: 30 pieces per minute. A solid die version of this machine will turn out up to 75M pieces per eight hour day, depending on box size.

### **Specifications:**

floorspace	5' x 20'
horsepower	3
driving pulley:	diam. 20", face 5"
pulley speed	120 R.P.M.
weight	14,000 pounds (crated)

*Full details on request*

Designed, built, and guaranteed by Inman, manufacturer of fine boxmaking machines for over seventy-five years.

#### **Size range:**

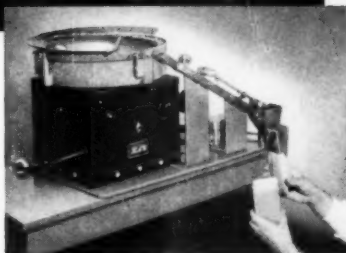
Depth	— 1" to 4½"
Width	— 6" to 12"
Length	— 10" to 20"

## **INMAN Manufacturing Co. Inc.**

AMSTERDAM, NEW YORK

## **The NEW Brown VIBRACOUNT Counting and Filling Machine**

Semi-automatically counts and fills small nails and screws at low cost.



Operator presses envelope against discharge tunnel to release pre-counted items. Foot switch controls the screws entering counter channel.

**Come and see us.**  
**BOOTH No. 260**  
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April 5-8

Save manual labor costs by packeting small screws, nails and similar items semi-automatically — up to 35 packets per minute. The Vibracount is easy to operate, compact, mounts on bench or table. Rapid—accurate—economical!

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**BROWN Bag Filling Machine Co., Inc.**  
FITCHBURG, MASS., U. S. A.

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The POWER  
of the LABEL... go  
to Ever Ready"**

*Anonymous*

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## Packaging Show will attract cross-section of industry

A virtual cross-section of American business leadership will view the packaging equipment, materials and services to be exhibited at the 23rd National Packaging Exposition in the Atlantic City Convention Hall, April 5-8, a study of last year's attendance made by the American Management Assn., sponsor of the show, indicates.

A statistical "market analysis" of registration cards filled out at last April's Chicago exposition shows an "extraordinary range" of industries and occupations concerned with packaging. Occupationally, registration went from president to shipping foreman; industrially, from food to chemicals. Engineers represented 15% of the total classified registration. Close behind—more than 14%—were owners, presidents, partners and directors. Nearly 19% of the registrants represented processors of foods and kindred products. Almost 12% were manufacturers of packaging products, including cartons, bags, boxes, cans, glass containers, envelopes, tubes, closures, casings, etc. Other industrial classifications included pharmaceuti-

cals and cosmetics; packaging processes and supplies; transportation; chemicals; packaging materials; industrial machinery, equipment and accessories; electrical; materials and materials fabrication; distributors; home, office, store and factory equipment and supplies; paper products other than packaging; packaging machinery and equipment; professional services; packaging specialties; paint and petroleum products; retail; military and Government; building supplies; textiles and apparel; services.

Almost three-fifths of those who saw the show came from outside the Chicago area last year. Almost a third were from the central states; approximately 16% came from the East; about 8% from west of the Mississippi. Canadians and other foreign visitors from countries as far away as Australia, Pakistan and the Union of South Africa made up 3.2% of the total.

Almost 400 exhibitors are expected to participate in this year's show, occupying more than 143,000 sq. ft. of floor space. Last year's 350 firms took up 125,000 sq. ft. of space to

display packaging equipment, machinery and supplies. For the first time exhibits will be placed on the stage of the Convention Hall at Atlantic City as well as on the boardwalk and lower levels. Reflecting the continuing trend toward mechanization of the packaging operation, more materials-handling equipment will be displayed.

The steady growth of the Packaging Exposition reflects a similar trend in the industry it represents, AMA spokesmen pointed out. Despite signs of a tapering off elsewhere in the economy, the packaging industry is still booming. Indeed, AMA leaders said, packaging may even benefit from slight setbacks in other fields. The return of competitive markets is putting more pressure on manufacturers to cut costs and promote sales—through better packaging as well as in other ways.

The increasing economic importance of the packaging function was emphasized by Floyd L. Triggs, advertising manager of Riegel Paper Corp. and chairman of the Exhibitors' Advisory Committee. Concentrated ef-

geared to meet and solve  
your **FOOD PROCESSING**  
and **PACKAGING**  
needs...



- LOW COST PACKAGING OF LIQUIDS AND POWDERS IN GLASS, CANS, BAGS, ENVELOPES AND BOXES.

Place your confidence in the modern, all-automatic plant facilities that can produce, package and process your food product at less cost to you.

Send us the raw materials—your headache ends there—we will compound, process and package your product... ready for shipment, packaged to be a powerful advertising, merchandising and selling tool and on time to meet your commitments.

Complete warehousing and shipping facilities available.  
**AIR CONDITIONED AND HUMIDITY CONTROL**

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**LETTERS TO EXACT SIZE TO FIT THE JOB**  
Now anyone can do a good job of hand lettering... and do it exactly the size you want to fit your layout. More than 600 variations in size and shape of letters may be produced from one templet—119 templets and lettering styles.

Try it yourself — no obligation. Write Dept. 186 today.

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## DAREX R·E·A solves tough laminating problem

Are you looking for a special laminant with *varied* properties? Consider how DAREX Resin Emulsion Adhesive meets the complex requirements of box tape laminators. It is extremely *water-resistant*. It forms a bond of kraft to glass-fiber that is strong yet *flexible*. It is *unaffected by temperature*. It won't bleed. It can be used on any stock from porous to highly sized; for lamination of paper to other

paper, film or foil. It is mold and vermin proof.

DAREX Resin Emulsion Adhesive also offers definite production advantages. It grabs fast, with fiber tear in minimum compression time. It's very economical because of high speed and high yield.

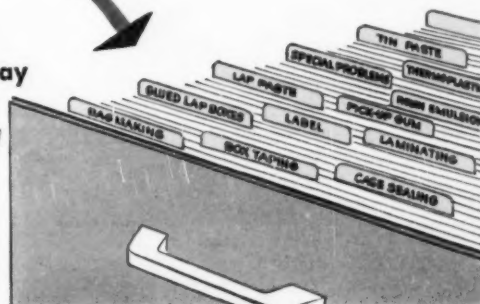
But . . . why not test these advantages yourself, in *your* plant, on *your* stock? Write on your letter-head for a generous sample, today.

**DEWEY and ALMY**  
**Chemical Company**

Cambridge 40, Mass.  
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Montreal 32, Canada  
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The solution  
to **YOUR**  
adhesives  
problem may  
be in our  
files **NOW!**

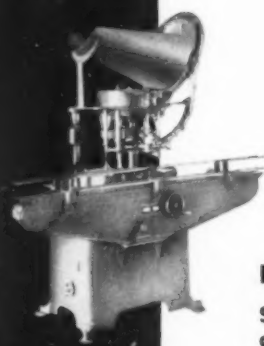


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A MODEL FOR EVERY PURPOSE . . .

A SPEED FOR EVERY NEED!

Capacity up  
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minute.

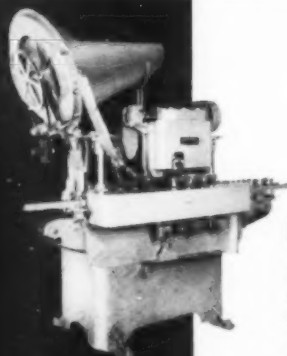


*Tops  
them all*

## RESINA

Standard, single head,  
automatic screw capper.

Flexible  
Fast  
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Automatic

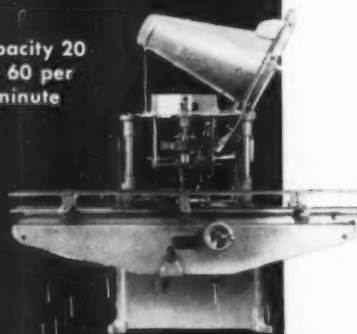


*Tops  
them all*

## RESINA

High speed, straight line  
screw capper. Rated for  
speeds up to 300 per  
minute depending on  
size of container.

Capacity 20  
to 60 per  
minute



*Tops  
them all*

## RESINA

Automatic innerseal ma-  
chine for selecting and  
applying standard inner-  
seals to various types  
and sizes of tin cans as  
commonly used in the oil  
industry.

Other models available.  
Write for descriptive  
literature.

Agents in principal cities through-  
out the United States and Canada

**RESINA AUTOMATIC MACHINERY CO., INC.**  
BROOKLYN 31, N. Y.

fort to deliver the expanded production of American industry to the consumer in better condition and at lower cost will be the principal current trend in packaging in 1954, he predicted. Better packages, which reduce spoilage, avoid waste and keep longer, and new machines, which bring production savings reflected to the consumer, give the buyer more for his money.

Another trend reported by Mr. Triggs is the greatly increased use of motor transport for shipment of goods. Already companies are finding it necessary to re-appraise their shipping containers in the light of trucking requirements. The resulting changes in container design, including smaller size, may be carried all the way back to the original product package, he said. Items on exhibit also, Mr. Triggs forecasted, will reflect continuing stress on unit packaging and mechanization of operations.

The exposition will open at noon on Monday, April 5, and close at 3 p.m. Thursday, April 8. The noon opening will prevail each day, except Thursday, when visitors will be admitted at 10 a.m. because of the earlier closing. Exhibit hours will end at 6 p.m. on Monday and Wednesday; Tuesday the show will be open until 9 p.m.

The association's annual Packaging Conference will be held at the auditorium in conjunction with the exposition. Its 2½-day program will include speeches and panel discussions on a broad range of topics, including production problems, merchandising, personnel and specific packaging and materials-handling techniques.

Conference registration will be made available to non-members as well as members of the AMA. Sessions will begin at 10 a.m. Monday, April 5, and close at noon on Wednesday, April 7. The schedule is as follows: Monday, April 5, from 10 a.m. to noon and from 2 to 4 p.m.; Tuesday, April 6, from 9:30 a.m. to noon and from 2 to 4 p.m.; Wednesday, April 7, from 9:30 a.m. to noon.

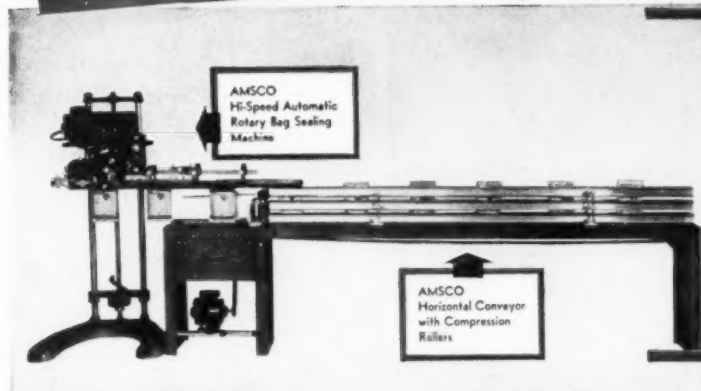
Rounding out the informational "package" offered will be the AMA Packaging Conference Exhibit of printed and other visual materials illustrating solutions of packaging problems. The exhibit will consist of forms, brochures, instruction manuals, training manuals, reports, records and other materials related to packaging, packing and shipping—gathered from hundreds of the association's member companies in various fields.



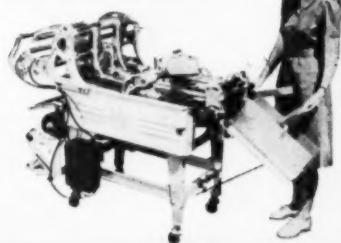
making a quality product  
is *your* business  
packaging it economically  
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that is why P. H. HANES KNITTING CO.

USES **AMSCO**  
**PACKAGING EQUIPMENT**



SIMPLEX High Speed  
Automatic Bag Making Machine



Bag packaging features to meet special requirements. 3 illustrations are shown below.

If you are interested in reducing the cost of your bag packaging, an AMSCO engineer will show you how. We can supply cost-saving equipment for every operation, starting from the roll stock to the finished product . . . bag making, bag filling, bag conveying, bag sealing . . . individual units, available for each operation or complete bag packaging set-ups.

Choose AMSCO to package your product in cellophane, maralux, diafane, foil, ploidim, polyethylene or any other heat sealable material . . . printed or unprinted. Savings in labor and increased production pay for your AMSCO equipment in a comparatively short time. Contact AMSCO today!

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31-31 48th Avenue Long Island City 1, N. Y.

Specialists in Diversified Packaging Equipment.



**Celanese Acetate Film**

#88 #100 #120 #150 #200

in **FULL ROLLS - Slit to Size**

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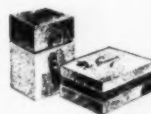
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Call Write or Wire

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National Distributors of **PLEXIGLAS, LUCITE, ACETATE  
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I say "Flock's got what it  
takes to sell your package"



**CLAREMONT  
FLOCK**

Claremont Flock...the plush that sells!  
Available (18 brilliant colors) from paper  
suppliers, affixed to sheets and boxboard.  
Can be printed, stamped, scored, die-cut.  
Imagination, alone, limits its uses! Write  
for color chart and data.

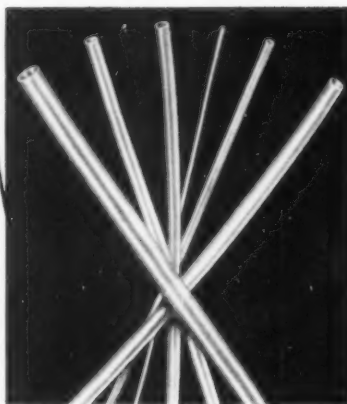
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The Country's Largest Manufacturer of FLOCK  
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Extruded Plastics

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**Pressure  
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H & R Polyethylene tubing is specified by America's leading pressure package manufacturers. Only 100% virgin material is used. Blends available to suit your particular needs. All tubing held to close tolerances within your requirements . . . custom dies made to your specifications.



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**OTHER POLYETHYLENE PRODUCTS**  
Sheeting, closure liners, applicator rods, tank lining, hoods, etc.



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**WE SPECIALIZE IN THE  
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Send us your problem. We'll be glad to advise you, make suggestions and quote prices promptly—no obligation on your part.

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INDUSTRIES**  
NAZARETH,  
PENNA.

**PROPER APPLICATIONS...PRODUCT IMPROVEMENT**

## Meat

(This article continued from page 104)  
specially designed folding cartons with greaseproof liners, constructed so that the package may be literally folded around the product and thereby set up with a minimum of effort.<sup>8</sup> Many such cartons are made with transparent windows in the display panel. Such packages afford excellent product protection in shipment and display, and provide a container for unused portions of the product.

### Ham wraps and bags

Earlier in this article reference was made to canned hams. Although many hams are sold in these attractive and useful metal containers, by far the largest number go to market in various types of wraps and bags. This applies not only to hams which must be cooked prior to serving, but also to the popular ready-cooked type.

To afford adequate product protection and prevent penetration of grease to the outside of the package, ham wraps customarily consist of several layers of materials, ending with the printed outer wrapper. One interesting departure from this practice is a ham bag adopted by Hunter Packing Co. The prefabricated bag consists of a protective structure of parchment, gray ham paper and a printed outer layer. Two sizes of bags accommodate hams weighing from 10 to 18 lbs. The seal of the package is effected with acetate tape. The materials used are formed into a ham-shaped bag after being die cut and the edges stitched with polyethylene tape.

Another important innovation in ham packaging is a collated type of wrapper pioneered by the Seattle Packing Co.<sup>9</sup> Sections of the wrapper include an outside sheet of vegetable parchment, a center ply of creped absorbent paper and an inner sheet of 25-lb. glassine, held together by a narrow glue strip at the base of the wrap. The new factory-assembled wrap increased output in the wrapping department almost 100%.

### Frozen meats

Although the pre-packaging of fresh-meat cuts for self service continues to be handled mainly at the retailer level, due largely to the perishability of the product, there has been

<sup>8</sup> See MODERN PACKAGING, Sept., 1950, p. 94.


<sup>9</sup> See "Pre-Combined Ham Wrap," MODERN PACKAGING, April, 1953, p. 134.



*"No Glue to Mix -  
No Goo to Fix!"*

JUST 8 HOURS OF *Sustained* PRODUCTION

**only 3 hand operations**

- 
- 1 —FILL THE LABEL HOPPER
  - 2 —PUSH BUTTON TO START
  - 3 —PUSH BUTTON TO STOP!

that's how **EASY** it is on the

**LABEL-DRI®**

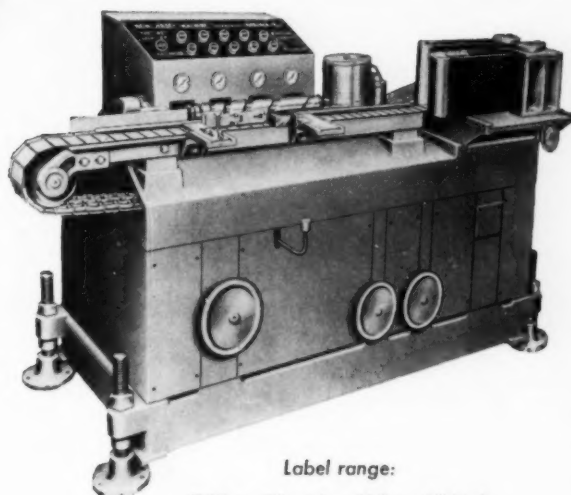
**IT'S FULLY AUTOMATIC**

*without cams or reciprocating motions*

**for LABELING WITHOUT GLUE!**

*Handles Flat, Tapered or Round Containers*

*FROM 1 C.C. TO QUART SIZE*



Label range:

$1\frac{1}{4}$ " to 5" wide— $\frac{1}{2}$ " to 6" high

**up to 150 per minute!**

No more horse-and-buggy labeling! This is modern labeling, for modern plants, where sales volume commands definite production quotas every day. Nothing is left to human fatigue . . . Downtime is "out of the picture".

Other Label-DRI units available up to 300 per minute, and hand-feed units up to 60 per minute.

Any printer can supply  
thermoplastic labels.

•  
No blisters . . . no loose edges  
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• Write for details!

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**NEW JERSEY MACHINE Corporation**

AUTOMATIC LABELING • PACKAGING

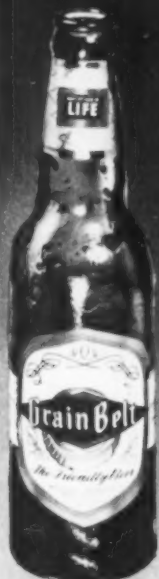


PAPER BOX MACHINERY • MAKERS OF THE PONY LABELRITE

FACTORY SALES AND SERVICE BRANCHES  
in CHICAGO—CINCINNATI—LOS ANGELES

MAIN OFFICE & FACTORY: 1510 WILLOW AVE., HOBOKEN, N. J.

# PREFERRED by the *Finest*



Gravure printers desiring the finest packaging are specifying rotogravure cylinder etchings by "Acme Gravure".

We can meet the most exacting needs for cartons, labels, vinyls, gift wraps, box boards, etc.

Let us produce a superior cylinder engraving for your difficult copy . . . and, assist you in planning if desired.

Your inquiry will receive immediate attention.



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1501 WEST CONGRESS STREET  
CHICAGO 7, ILLINOIS



# Make these wonderful tear-resistant cellophane bags and eight other styles automatically



**CORD  
REINFORCEMENT  
ENDS TEARING  
OF BAG TOPS**

Packagers and retailers hail the *improved* film bags made on the Renka Bag Machine. A fine cord within the foldover top of Renka-made bags gives them extra-strength, extra tear-resistance.

**Higher packaging speeds**  
less careful handling is needed

**Better retail appearance**  
product can be removed and replaced  
time after time without tearing bag

The Renka makes bags from cellophane, film and paper, at speeds from 10,000 to 40,000 per hour, depending on size. The size range of the bags it produces is from 2" to 22½" in length, and from 3" to 13" in width. Maximum length is *smaller* than maximum width because the bags are made from the width, not the length of the roll.

A compact machine which can rapidly be changed from one bag size to another, the Renka also makes other styles of bags:

1. flat bags with folded tops
2. bags with rounded flaps
3. bags with flaps and foldover tops
4. paper-backed bags with reinforced tops on the film side
5. tobacco pouches
6. gusset bags with two side seams and no bottom seams
7. paper bags with transparent film windows
8. bags without folds or flaps



**RENKA  
BAG MACHINE**

An interesting folder and sample bags will be sent to you on request. Write for them today!

**G. van der Meulen & Zn. N. V.**  
Prins Hendrikkade 173 Amsterdam, Holland



considerable activity in the packaging of fresh frozen-meat cuts at the packer level. Much of this type of merchandising has been conducted on an essentially local basis by smaller independent firms with such products as "minute steaks" and frozen hamburgers which can be stored for long periods in home freezers. The housewife regards such products as emergency items. Thus, although their growth has not been spectacular, fresh frozen meats represent another way in which packaging has helped create new market opportunities for the industry.

A popular type of package used for these products consists of a folding carton within which the frozen chops, patties, etc., are separated by sheets of cellophane or other suitable material. Printed cellophane or polyethylene envelopes also find frequent use for this type of product. Polyethylene's ability to withstand sub-zero temperatures without cracking makes it particularly suitable for such applications. The prevailing practice with cartons, which are usually employed when the package is to contain several frozen cuts or patties, is to highlight on the display panel a full-color illustration of the meat as it appears when ready to serve. Name of the producer, number of portions and serving suggestions are on the bottom panel or on a printed insert.

Among the larger packers, both Armour and Swift have developed unified lines of frozen fresh-meat items making effective use of appetite-appeal product vignettes on the cartons. Latest addition to Armour's fresh frozen "Meal-in-Hurry" line is Beef Grill Steak. Three cellophane-wrapped steaks are packed in the 8-oz. self-service carton, which contains complete cooking instructions as well as a full-color illustration of a grill steak entree. Other items in the Armour line include pork cutlets, veal cutlets, pork chops, pork tenderloins, hamburger, chopped beef and "steakees."

Although there has been a limited amount of interest by producers in pre-cooked frozen meats packed in composite cans, the major trend along this line appears to be in beef pies and other products of this kind packed in the new-type rigid foil packages which can be placed directly in the oven for heating. Complete frozen pre-cooked meals, including meat items, are also being marketed in this versatile type of container.

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can

# Pack Anything with



## SUPERIOR CUSHIONING

**PADS & BLANKETS**  
*and save money, too!*

**PROTEX** pads and blankets give you the *maximum* interior cushioning protection obtainable and fit virtually any product or assortment you can name! The cost is substantially lower than most other forms of interior cushioning and take only a fraction of the time to pack. Avail yourself of this *important* money-saving clean method of packing. The protection your products get is superb...resists all forms of shock and protects the finish of the product as well. Ease of packing, availability of ample supplies of packing material on hours notice are important too...you don't have to order far in advance of production or store supplies all out of proportion to their rate of consumption.

**Consult us—** Present your packing problems to us for complete package engineering design and service by experts. We will show you how to improve package performance and save money too!

WRITE, WIRE, OR PHONE US

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**NATIONWIDE SALES & DISTRIBUTION**

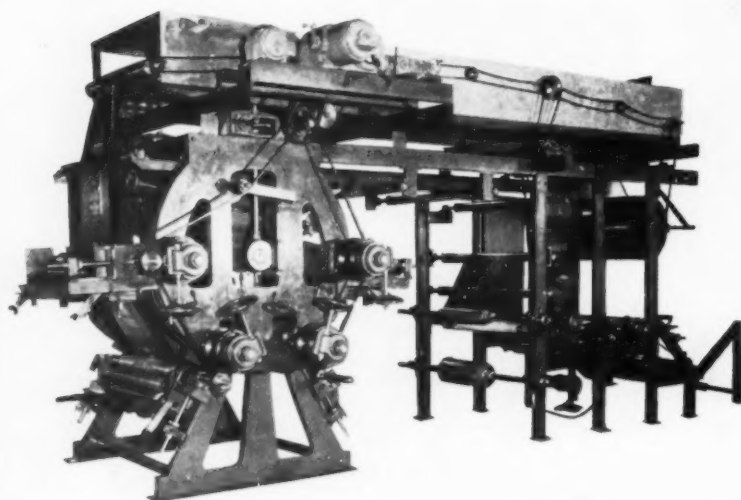
**A great advancement for printing films**

# **NEW flexographic LEMBO**

## **4 color supported-web press**

The most perplexing problems of high-speed in-register printing of polyethylene and other plastic films are solved by this ingenious Lembo press. The web is carried through the printing rollers on a continuous blanket, assuring perfect printing at speeds from 0 to 500 feet per minute. Compact construction. Widths from 24" to 60".

- Choice of 360° planetary gear register control or electronic register control
- Impression cylinders taken out of contact with printing rollers by electric motors
- Optional unit dries ink between impressions for outstanding speed.
- Can be equipped for gravure printing, and with rewinds for cellophane or paper



Ask about  
Lembo surface  
printing machines  
up to twelve  
colors.

Full details and quotations on request

**LEMBO machine works, inc.**

248 East 17th St.

Paterson 4, N. J.

Manufacturers of Printing Presses and Cylinders

## **Swedish surprise**

America enthusiasts are now able to purchase Swedish Aquavit on their homeward voyage aboard the Swedish American Lines ships. This ready-



made market is supplied with a surprise package containing the national drink in combination with Swedish bourbon and blended scotch whiskies.

Made possible by the United States Customs ruling allowing one gallon of duty-free spirits per resident, the combination package offers substantial savings over stateside purchases.

The five 4/5-qt. S.A.L. private-brand assortment is packed in a corrugated fibreboard carrying case. A partitioned insert affords maximum protection and die-cut handles provide easy carrying for the trip through customs and home. Printed with the three-crown trademark, the suitcase gives additional advertisement for the Swedish American Lines private-brand stock.

## **Cushioning forum**

"Cushioning in Packing" was the subject of a Joint Industrial Conference held recently in Detroit. Sponsored by the Materials Management Center of Wayne University and General Motors Corp.'s Preservation-Packing Committee, the sessions covered cushioning principles, techniques, test methods, materials and applications. More than 250 industrial and commercial packaging men were told that cushioning means and methods can be engineered by analytical methods and their effectiveness proved by various testing methods. Copies of the 24 technical papers presented, constituting a handbook-type information on cushioning and packaging, are available at \$2 apiece from Wayne University Materials Management Center, 5402 Second Blvd., Detroit 22, Mich.

**You'll want  
these facts  
on . . .**



**The  
newest note  
in packaging...**

**POLYETHYLENE  
FILM AND TUBING**

**ESTABLISHED BY  
IRVINGTON  
VARNISH & INSULATOR COMPANY**  
6 Argyle Terrace, Irvington 11, New Jersey  
Plants: Irvington, New Jersey; Riverside, Calif.;  
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**IVITHENE  
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**Here's a new name in packaging materials—  
IVITHENE . . . from a company  
with almost 15 years' experience in plastic extrusion**

IVITHENE is polyethylene extruded in film, lay-flat tubing and heavy sheeting. It offers all the remarkable advantages of top quality polyethylene and has achieved wide acceptance as material for drum liners, multiwall bag liners, textile wraps, produce packaging and fabricated containers.

And it offers an important additional advantage—Irvington's extensive production facilities permit unusually prompt delivery to users—both large and small.

For information on characteristics, suggested applications and technical properties, just mail the coupon below for your copy of our IVITHENE booklet on packaging materials.

**SEND THIS CONVENIENT COUPON NOW**

**IRVINGTON VARNISH & INSULATOR**  
DIV. OF MINNESOTA MINING & MFG. CO.  
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Plants: Irvington, N. J.; Menloville, Calif.; Hamilton, Ontario, Canada

Irvington Varnish & Insulator Co.  
28 Argyle Terrace, Irvington 11, N. J.

MP-2/54

Gentlemen:

Please send me your 8-page booklet on IVITHENE packaging materials.

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**HAYSSEN** helps put this show on the road... solves Wrap-Pak packaging problem



1 Aluminum foil food container enters machine automatically.



2 Note automatic placement of board cover over food tray.



3 Package is over-wrapped with foil-laminated sheet... Prestol! Automatic, attractive packaging of frozen food the Hayssen Way.

## See how the HAYSSEN WRAPPING MACHINE wraps your frozen food products!

Completely automatic handling of the new Reynolds Wrap-Pak was solved when Hayssen perfected the "3-in-1" packaging method for this premium quality frozen food package. Use of a cover over the tray posed the problem. Formerly requiring a hand operation, Hayssen engineers worked with Reynolds to devise an easy, automatic method for placement of the cover before overwrapping the package with foil. *The superior qualities of the aluminum foil package are now matched by its lowered packaging cost.*

Be sure to visit the Reynolds packaging show when it rolls your way. You'll see how to get spectacular packaging savings with a Hayssen automatic machine... up to 500% over hand methods on some products. What's more, you'll see how to get a neat, tight package

with unmatched eye-appeal that swings the buy-decision to your product every time. Write for more information.

IT PAYS TO WRAP THE HAYSSEN WAY

# Hayssen MFG. COMPANY

Dept. MP-2, SHEBOYGAN, WISCONSIN

Since 1910, One of the World's Largest Manufacturers of Wrapping Machines  
for: PAPER • TEXTILES • BAKED GOODS • VEGETABLES • FROZEN FOODS  
CANDY • ICE CREAM • DAIRY • MEATS • IRREGULAR SHAPES

## Vacuum-forming

(This article continued from page 113)  
number of conclusions in regard to the merits of vacuum forming. The chief advantages of the method can be summed up as follows:

1. The process can be used to produce parts of considerably thinner side walls than can possibly be achieved by means of injection molding or extruding operations.

2. It can readily handle unusual profiles and relatively intricate shapes and in some cases can use the product itself as a mold. Thus it is a natural for that large and growing field called "contour packaging."

3. It permits pre-printing of the piece to be molded or the forming of coated, flocked and certain laminated plastics.

4. It makes pre-testing of containers and designs practical because the molds use low-cost materials—plaster, wood, light-weight metal—and can generally be made up in a few days.

5. It permits fabrication of large sheets either for single pieces or smaller multiple shapes.

Because of these advantages, it is predicted by authorities in the field that vacuum-formed plastics will eventually package thousands of products that could not previously use plastic containers. This prediction is already borne out by some of the case examples discussed.

However, it should not be assumed vacuum molding is intended to replace accepted methods of forming plastics. Where rigidity and strength are required, it is definitely not a substitute for injection molding. Moreover, conventional methods of forming sheet plastics (with the use of heat, mechanical pressure and male and female dies) perform certain sheet-forming jobs equally as well as or better than can be achieved with vacuum. The mechanical method, for example, is said to provide better uniformity in the finished pre-fabricated product. Molds do not have to be drilled with suction holes. Considerably more pressure can be employed and the method is not limited to flanged-edge techniques as is the case in vacuum forming.

Where volume runs are involved and where the selling price of the article can absorb the cost, injection and compression molding will still be the preferred methods of forming

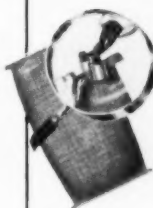


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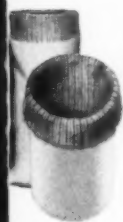
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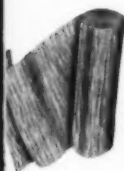
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many plastic containers used in packaging. For one thing, production is much faster and working with resins obviously consumes less material than sheet processes requiring extensive trimming. On the other hand, the equipment overhead and the mold or tooling-up costs, as is well known, are very expensive in injection molding. Moreover, development work generally takes weeks or months. For these reasons, speedy, low-cost vacuum-forming techniques might well be used in testing models that later will turn to injection-molding or extruding operations.

In some cases vacuum forming is now being advantageously combined with other techniques. A transparent cover for "Junior Deb" comb-and-brush set employs a vacuum-formed dome cemented to the cover, which is fabricated in the conventional method. An imitation rose encased in the bubble on the lid adds a highly unusual decorative touch to the package.

A lid for a handkerchief packaged in a set-up paperboard tray has a vacuum-formed dome, in the center of the fabricated sheet-plastic lid, encasing an artificial flower. In the latter package the dome is first vacuum formed and the acetate sheet is then fabricated into shape as a telescoping cover.

### **Summary of uses**

Some of the packaging fields where vacuum-formed plastics are now being used or have potential applications have been indicated in the foregoing discussion. The various applications can be summarized as follows:

1. *Contour- or profile-shaped transparent containers* for items such as golf balls, tools, razor blades, surgical instruments, novelties, pharmaceutical products and many items sold in kits or sets. The value of transparent plastic packages for these products needs no elaboration in view of the merchandising potentials already proved by the self-selling visibility package. Vacuum forming, however, adds new packaging advantages including unusual shape, the sparkle of clear plastic, accent on three-dimensional display, compactness, economy of materials and adaptability for one-shot, multiple or strip-packaging techniques. It offers these advantages, too, for applications where they might not previously have been practical

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from a standpoint of cost, design or the limited volume needed.

2. *Transparent domes or covers for carded merchandise.* These provide immediate product identification, attract attention, keep merchandise from being lost or pilfered. Carding of merchandise, providing brand identification, instructions and price marking, of course, needs no boosting as a self-service merchandising device. Vacuum-formed plastics, however, are making important new contributions in this field because of their low cost and versatility for handling all kinds of shapes and sizes. Notions, hardware parts, small household items and the like can well look to vacuum-formed plastics for a packaging spruce-up that will make the product more attractive, easier to display and easier to buy.

3. *Platforms, trays, holders, box lids and other package components.* Intricate shapes are readily produced by vacuum forming; so, too, are cavities that are an accurate mold of the product to be held. Thus plastic package components produced by this method can offer numerous special opportunities from the standpoint of functional design. Other materials that are less expensive than plastic sheet may actually (at least in some cases) be more costly to use because of higher fabricating costs. For this reason the plastic tray, platform or similar component is already finding interesting applications and others are known to be under development. The vacuum-formed plastic tray is moisture and soil resistant and is generally more durable than paperboard. Thus it offers unique opportunities to packagers of products such as toy sets, that can get double duty from a platform—first, as a display medium and, second, as a functional part of the set.

Vacuum-formed display platforms or set holders for cosmetic items designed for use on the dressing table are another possibility and are, of course, suggestive of many similar combinations where the display holder can continue to be of value in the home of the consumer.

In an entirely different application, vacuum molding contributed to the success of what was probably the most novel food package produced last year. This was a product-molding container that shapes butter and oleo into fancy prints. The container consisted of a vacuum-formed vinyl cup



and a paperboard collar.<sup>3</sup> The vacuum-formed plastic container or packaging component would, therefore, seem also to be a logical candidate for a number of products filled as a liquid but marketed as a solid or semisolid, as is the case in regard to the oleo-shaping package. Development work, for example, is known to be already under way in regard to vacuum-formed packages for soap—with product-embossing mold formed right into the plastic.

Loose, granulated products are using vacuum-formed packages. A cellulose acetate container for bath salts, shaped like a toy duck, is employed by the Arthur Philippi Co., New York. The plastic container is mounted on a card. The bath salts are dispensed by puncturing a hole in the plastic. Obviously a low-cost container, the plastic duck nevertheless has sure-fire juvenile appeal and certainly indicates a large potential for similar applications.

4. *Displays and replicas of trademarks, packages, products and emblems.* Vacuum-formed plastics offer some of their most clear-cut advantages in this field. From a standpoint of fabricating and material costs, it is safe to say that never before has the packager had greater freedom in the use of intricate three-dimensional shapes combined with a wide range of colors. Moreover, even the largest-sized display pieces or facsimile packages that are practical for point-of-purchase use pose no problem to vacuum forming. Either lithography, gravure or the silk-screen process can be used for pre-printing the plastic sheet.

Thus any post-forming decoration is eliminated, although such processes can be used additionally when desired.

#### Sources

Vacuum-formed plastic containers can be obtained from a growing number of suppliers who specialize in the process or who have departments set up for it in addition to other facilities for fabricating and converting plastics.

However, because of the relative simplicity and low cost of the forming machines, some packagers, like Master Rule, have installed vacuum-forming equipment for in-plant use. This procedure is particu-

<sup>3</sup> See "Package That Molds the Product," MODERN PACKAGING, May, 1953, p. 90.



This may seem a startling admission for a producer of the machine acknowledged by converters everywhere as the leader in Polyethylene bagmaking. However leadership always walks hand-in-hand with responsibility, one aspect of which is to keep the record straight. Another is the twin problem of eliminating existing snags as well as anticipating those that technological advances will create. Converters look to Roto for these answers.

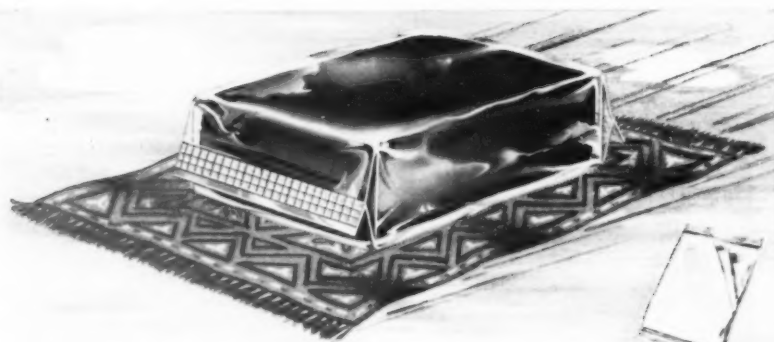
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larly feasible where the product itself is the mold over which the plastic sheet is formed. This, however, is not the only reason for setting up an in-plant operation—in certain instances closer control of production and inventories and freedom to experiment with new designs are additional recommendations for the adoption of in-plant forming.

The sheet materials generally used in vacuum forming plastics for packaging purposes include cellulose acetate, cellulose acetate butyrate, polystyrene (both oriented sheet and copolymer) and vinyl (both rigid and flexible).

In addition to these, some experimental work has been conducted with polyethylene. Polyethylene has two current limitations—lack of clear transparency and critical temperature range—but these are not entirely limiting, since clarity may not be required and temperature and cycling can be handled successfully, it is claimed.

The sheet thickness handled generally ranges from 0.010 to 0.030 in. or higher, depending on the individual design requirements. Plastic packages to be made by vacuum forming require relatively uniform wall thicknesses, for built-up sections cannot be obtained with this process.

The choice of plastic material used in vacuum forming does not depend on forming characteristics (although these are important) so much as it does on use properties, including clarity, strength, toxicity, water-vapor transmission, surface finish and the like.

The machines used in vacuum forming are relatively simple. The processing, too, is not a complicated procedure.

Materials used for vacuum-forming molds include wood, plaster, plastics of all types, sprayed metal, cast aluminum and steel. Wood or plaster are recommended for short runs (less than 1,000 pieces). Plaster molds are generally used in working up a design for a part to be vacuum formed because they can readily be modified without the need for scrapping after each revision.

The techniques of vacuum forming, because it is a relatively new process, challenge exploration and development. As in any new field, certain points must rightfully be questioned until they have been proved by the test of successful, satisfactory use on



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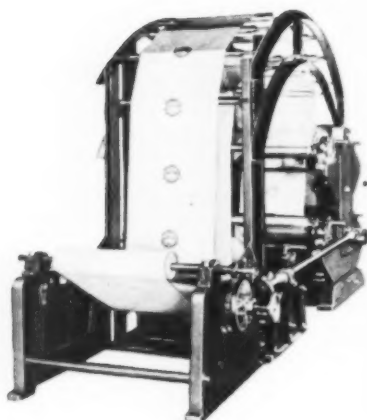
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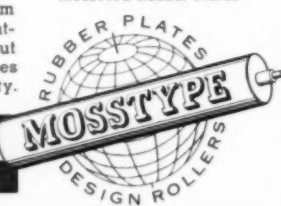
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a wide scale for a substantial period of time.

The prospective user should keep in mind the fact that technology in this field is not fully developed. On the other hand, problems that may seem unsurmountable in one quarter may already be solved or near solution in another. It must also be remembered that the new medium faces the designer with serious responsibility to understand and interpret the potentials of vacuum forming.

The advice contributed by one authority in vacuum forming is first to research the techniques and design potentials of the process in terms of your project, then compare the advantages and limitations with those of other methods that might be suitable and, finally, "cost" the project.

Economics on the one hand and merchandising opportunities on the other must then be weighed to arrive at a conclusion as to whether vacuum forming should be used.

### Sources of information

Additional information on the possibilities of vacuum-formed plastic packaging may be obtained from any of the following companies. The list is by no means a complete one, but includes those supplier companies concerned with the particular developments and applications discussed in this article: Vacuum fabricators—Einson-Freeman Co., Inc., Starr & Borden Aves., Long Island City 1, N. Y.; Robert Gair Co., Inc., 155 E. 44 St., New York 17; Merit Displays Co., 120 E. 16 St., New York; Radio Frequency Labs, Inc., Boonton, N. J.; Shaw-Randall Co., Inc., 39 Sabin St., Pawtucket, R. I.; Vacuum Molding Co., Boonton, N. J. Plastics material suppliers—Bakelite Co., Div. Union Carbide & Carbon Corp., 30 E. 42 St., New York 17; Celanese Corp. of America, 180 Madison Ave., New York 16; Eastman Kodak Co., Cellulose Products Div., Rochester 4, N. Y.; Monsanto Chemical Co., 812 Monsanto Ave., Springfield 2, Mass. Machinery suppliers—Auto-Vac Co., 2120 Post Rd., Fairfield, Conn.; Radio Receptor Co., Inc., 251 W. 19 St., New York 11; Vacuum Forming Co., Port Washington, N. Y.

**CORRECTION:** The supplier of the paperboard covers described in the article, "Faster Foil Tray Packs," MODERN PACKAGING, Dec., 1953, p. 118, was erroneously identified. The paperboard covers used by Myers Food Co. and Weiland Packing Co. are produced by Denny Paper & Board Co., P. O. Box 7362, Philadelphia 46, Pa.





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PACKAGING AND DISPLAY DESIGNER: Leading creative manufacturer established over 30 years wants first-rate artist-designer. Must be able to initiate and develop ideas for packages, merchandising aids and point of sale displays made of all materials. Must have similar experience and do good visuals and comprehensives. Location: commuting distance from N.Y.C. Excellent opportunity. Write in confidence. Box 707, Modern Packaging.

SALES REPRESENTATIVE AND SALES PROMOTION EXECUTIVE: Advertising Display and Packaging. One of the country's foremost manufacturers of permanent and semi-permanent advertising signs and merchandising displays, established over 30 years, with an unlimited range of unusual facilities, is now increasing its sales force and offers an exceptional opportunity for one or two top-notch men, local and out of town, having the necessary qualifications. Salary or drawing account commensurate with ability. The company has a similar opportunity in its packaging division, which produces some of the nation's outstanding gift containers and folding boxes. Please write in complete confidence. Box 708, Modern Packaging.

DISTRIBUTORS WANTED: For industrial packaging and preservation equipment. Nationally advertised, special packaging devices that save time and money in large and small shipping departments. A few valuable territories are open to responsible firms selling to industrial shippers. Write for details to: Cargo Packers, Special Products Company, 73 Rutledge Street, Brooklyn 11, N.Y.

### TECHNICAL SERVICE REPRESENTATIVE

Plastics industry. Major supplier of thermo-plastic sheets, films and molding compounds requires a field technical service man to age 35. Prefer graduate in engineering or physical sciences, but must have at least 2 years technical training at college level. Experience in plastics industry necessary with emphasis on conversion of film and fabrication of sheeting. Submit complete resume stating age, education, experience and salary requirements.

Box MP 645  
221 W. 41 St.  
N.Y. 36, N.Y.

CHIEF SAMPLE DESIGN ENGINEER: To supervise sample design department for large mid-west folding carton company. Age 30 to 45. At least 5 years experience with a folding or corrugated carton manufacturer necessary. Should have patents in own name or have assigned them to employer. Knowledge of paperboard and glue machines essential. Must be able to maintain favorable customer contacts. Mail replies to Box 713, Modern Packaging.

(Continued on page 210)

# *Durethene* presents

the real answer to PERMANENT  
PRINTING on Polyethylene Film ~ ~



## NO MORE FLAKING, CRACKING OR RUBBING OFF

Three years of intensive laboratory research and experiment have finally produced the *successful* answer to better printing on Polyethylene Film. Now you can be sure of brilliant, *permanent* printing that "stays put" during the whole life of your package, without cracking, flaking, rubbing off or smearing during shipping or shopping. DURETHENE CORPORATION's new, exclusive *Permatreated* ION-FILM is preprocessed to "marry" the printing inks to the surface of the Film, by overcoming the chemical resistance which has long plagued converters when working with improperly treated Film.

DURETHENE *Permatreated* ION-FILM, now in Converters' hands, is available in all widths of Tubular Film, for making either plain or gusseted bags. And remember this, too: DURETHENE Polyethylene Film makes the *strongest* bags you can get—cuts down sealing and handling problems because it is rigidly held true-to-gauge throughout every roll—is available from leading Converters throughout the country. Write for the names of DURETHENE Converters nearest you.

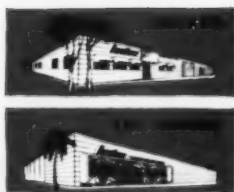
- DURETHENE Polyethylene Film is also widely used by major packagers everywhere for consumer-packaging such products as PRODUCE ★ POULTRY ★ FROZEN FOODS ★ POPCORN ★ CANDY ★ CHEMICALS ★ SOAP ★ TEXTILES ★ COSMETICS ★ LEATHER GOODS ★ SPECIALTIES

See us at BOOTH 1223, Packaging Show, Atlantic City, April 5th to 8th



## FULL WIDTH DURETHENE FILM FOR DRUM, BOX, BAG LINERS

For weight-reducing, moisture-proof, chemical-resistant liners that protect product quality and cut shipping costs, packers of lard, powdered and granulated foods, chemicals and other products are using DURETHENE Polyethylene Film Liners, plain or colored—now made in widths up to 40", and in all gauges.



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CORPORATION



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WEST COAST FACTORY: 5600 W. ARBOR VITAE ST., LOS ANGELES 45, CALIF. • OREGON 8-4969

Sales Offices in  
Principal Cities

(Continued from page 208)

## SITUATIONS WANTED

**COATING, LAMINATING, EXTRUSION** Gravure printing, impregnation, foil rolling, vacuum metal evaporation, Rubber, plastics, thermosets and latex, Aluminum, papers, films, textiles. Classified defense and commercial. Extreme temperature conditions. At present chemical director, Aa-1 multi-plant company which operates in all these fields. Wish to change; available for two days per week on permanent basis. Development, Production or Marketing. Individual problem or general supervision or special conditions. Box 704, Modern Packaging.

**PACKAGE DESIGNER:** Formerly with one of New York's top designers, now free lancing and offering diversified, creative and imaginative design interpretations, specializing in food and toy accounts. Personal attention given to every detail of your design problem. Estimates made on all jobs. Eugene R. Smith, 480 Lexington Ave., New York 17. Telephone: PLaza 3-1976.

## MISCELLANEOUS

**SERVICE AND REPAIR:** Emergency wrapping machine repair service set-up and installation. 24 hour service (anywhere). Electric eye specialists. Phone, write or wire. Package Wrapping-Machinery Service, 333 N. Michigan Ave., Chicago 1, Illinois. We service, Package Machinery, Forgrove, Hayssen, Oliver, Transwrap, Battlereck, Triangle, Palmer Box, Stokeswrap, Simplex Bag, Miller, Lynch Wrap O Matic, Pneumatic Scale, Doughboy-Sealers, Campbell wrappers.

**PLASTIC SCRAP:** Cellulose Acetate and rigid vinyl sheet scrap in any quantity. Also Polystyrene, Acetate, Butyrate molded rejects, scraps and excess molding powder inventories. Box 702, Modern Packaging.

**DESIRE TO PURCHASE:** Celanese film P904 formulation, 88 to 200 gauge. Full or partial rolls, surplus stock. Also Plexiglas sheets. Commerce Plastics & Supply Corp., 630 Broadway, N. Y. C. GR 7-5000.

### WANTED TO BUY

Toiletries, cosmetics or packaged drugs business. One of our clients wishes to purchase outright or buy the controlling stock of an established company manufacturing and distributing toiletries, cosmetics or packaged drugs. The company may be small, medium or large. Its operation may be profitable, or if unprofitable it should have business potential that can be revived and improved by energetic merchandising. Write to Mr. Straus giving a brief description of your products and the present operation of your company. All negotiations will be handled in strict confidence.

Ovesey, Berlow & Straus, Inc.  
57 Park Avenue  
New York 16, N. Y.

**ART AND PACKAGE DESIGN STUDIO:** Highly creative, experienced and production-wise staff, with centrally located N.Y. offices and aggressive sales force, seeks connection with packaging firm wishing us to act as their Art and Design department in the N.Y. area. Write to: Kurmit Associates, 4 West 37th St., New York 18, N.Y.

**SERVICE AND/OR EQUIPMENT WANTED:** Interested in obtaining data relative to new high speed hard gelatine capsule filling machine, as well as soft gelatine making and filling machine. Will consider organization willing to engineer, design and build such equipment. Box 710, Modern Packaging.

**PRINTER WANTED:** With experience in the printing and manufacture of polyethylene and pliofilm bags and other heat sealable transparent materials. Experience necessary. Send full information to Box 711, Modern Packaging.

**PLASTIC SCRAP AND REJECTS IN ANY FORM:** Cellulose Acetate, Butyrate, Polystyrene, Vinyl, Polyethylene, etc. We pay top prices for clear, colored and printed scrap in any quantity. Box 700, Modern Packaging.

All classified advertisements payable in advance of publication

Closing date: 10th of preceding month; e.g., February 10 for March issue

Up to 60 words .....\$10.00	Up to 120 words .....\$20.00	Up to 180 words .....\$30.00
Up to 60 words (boxed) \$20.00	Up to 120 words (boxed) \$40.00	Up to 180 words (boxed) \$60.00

For further information address Classified Advertising Department,  
Modern Packaging, 575 Madison Avenue, N. Y. 22, N. Y.

Picture **YOUR** Packages  
with Your **OWN** Colorful  
"SEAL OF DISTINCTION"

# 4 Color Printed Kraft Gummed Sealing Tape

4 Points to remember about On-To-Sta 4 Color Sealing Tape

- ★ Every carton and package leaving your plant carries your 4-colorful advertising message everywhere.
- ★ Your packages are padlocked with your company's name —they're pilferage proof. Dust and dampness are locked out.
- ★ On-to-Sta tape is of uniform top quality. It seals securely and remains perfectly flat.
- ★ Our creative art staff will skillfully prepare art work for 4-color tape to fit your particular needs.



Ask your local jobber about  
**ATLANTIC'S 4 Color Tape,**  
or contact us directly.

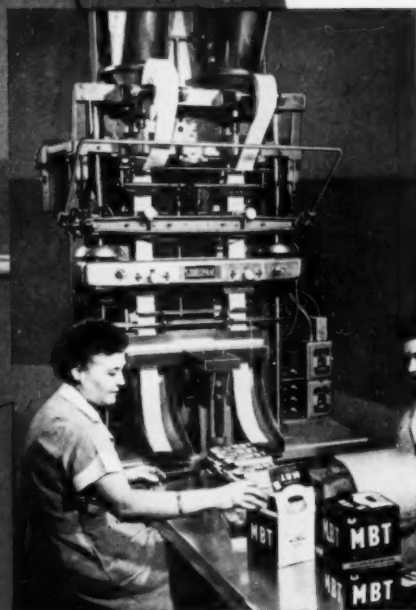
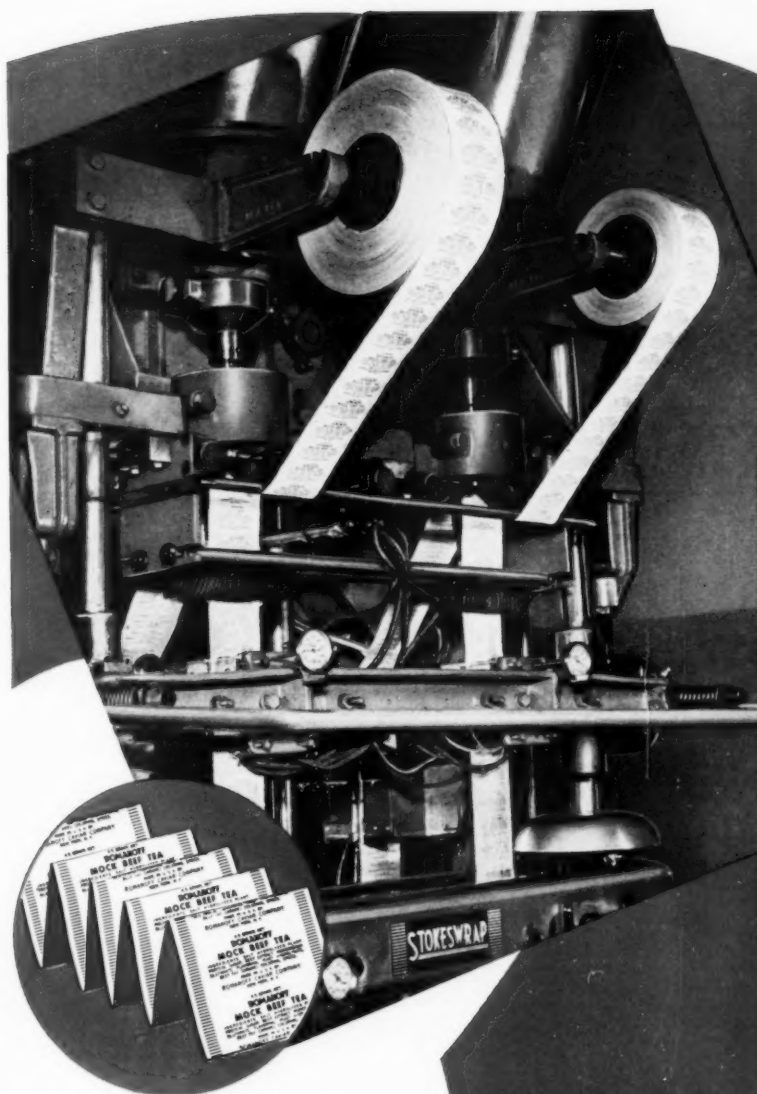
# ATLANTIC

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# Speed Packaging for **BIGGER PROFIT!**



Stokeswrap machine installation at Romanoff  
Center Company, New York.

To economically keep up with demand, the packets for Romanoff's famous MBT are formed, filled, and sealed on a time-saving STOKESWRAP.

This new hot drink comes in powdered form and is packaged in strip-perforated, laminated foil packets. Neat, exact registration of the printed strip is made possible by the STOKESWRAP's accurate operation.

The STOKESWRAP is available in two sizes; speed ranges from 50 to 140 packages per minute. Any type of approved heat sealing paper, foil, cellophane or Pliofilm may be handled on a STOKESWRAP.

Write and explain your packaging requirements. Expert engineering counsel is yours without obligation. Bulletin 4956 sent promptly upon request.

## Stokeswrap

Increase your Profit Margin with S & S Machines



### STOKES & SMITH CO.

FRANKFORD, PHILADELPHIA 24, PA.

Pacific Coast: SIMPLEX PACKAGING MACHINERY, INC., 534 - 23rd AVE., OAKLAND 6, CALIF.



SUBSIDIARY OF FOOD MACHINERY AND CHEMICAL CORPORATION

TRADE MARK

# INDEX OF ADVERTISERS

FEBRUARY 1954

Acme Backing Corp. ....	29	Goodrich, B. F., Chemical Co., Geon Div. ....	7	Package Machinery Company ..	130
Acme Gravure Services, Inc. ....	194	Goodyear Tire & Rubber Co., The, Pliofilm Dept. ....	19	Package Products Co. ....	79
American Can Company ....	76, 77	Gottcho, Adolph, Inc. ....	158	Paper Machinery & Research Co., Inc. ....	146
American Cellulose Corp. ....	148	Grand-City Container Corp. ....	22, 23	Paterson Parchment Paper Co. ....	200
American Excelsior Corp. ....	195	Gummed Products Co., The ....	43	Permacel Tape Corp. ....	213
American Partition Company ....	178	H & R Industries ....	192	Peter Partition Corp. ....	163
American Type Founders ....	139	Harcord Manufacturing Co., Inc. ....	155	Plastic Container Corp. ....	49, 50
American Viscose Corp., Sylvania Division ....	205	Hayssen Mfg. Company ....	198	Plax Corp. ....	214
Amesco Packaging Machinery, Inc. ....	191	Hazel-Atlas Glass Company ....	67	Pneumatic Scale Corp., Ltd. ....	10
Anderson Bros. Mfg. Co. ....	156	Heekin Can Company, The ....	162	Potdevin Machine Co. ....	178
Angier Corp. ....	155	Hinde & Dauch ....	153		
Armour and Company ....	51	Hudson-Sharp Machine Co. ....	204		
Armstrong Cork Company, Glass and Closure Div. ....	159				
Arvey Corp. ....	201	Inman Manufacturing Co., Inc. ....	187	Radiant Color Co. ....	148
Atlantic Gummed Paper Corp. ....	210	Inta-Roto Engraving Corp. ....	32	Radio Receptor Co., Inc. ....	34
Avery Adhesive Label Corp. ....	53	International Staple & Machine Co. ....	38	Rapid Cutting Co., Inc. ....	172
		Irvington Varnish & Insulator, Div. of Minnesota Mining & Mfg. Co. ....	197	Redington, F. B., Co. ....	3
		Irwin Corp. ....	165	Resina Automatic Machinery Co., Inc. ....	190
Bakelite Company, A Division of Union Carbide and Carbon Corp. ....	46, 185	Johnston Foil Mfg. Co. ....	27	Rexford Paper Company ....	206
Bartelt Engineering Co. ....	149	Jones, R. A., & Co., Inc. ....	143	Reynolds Metals Company ....	12, 13
Beacon Packing Corp. ....	188	Jones & Laughlin Steel Corp. ....	63	Rhineland Paper Co. ....	202
Bemis Bro. Bag Company ....	157			Riegel Paper Corp. ....	8
Bensing Bros. and Deeney Sales Co. ....	57	Kalamazoo Vegetable Parchment Co. ....	62	Roto Bag Machine Corp. ....	203
Bernardin Bottle Cap Company ....	207	Kidder Press Company, Inc. ....	36	Rowell, E. N., Co. Inc. ....	56
Bloss, E. W., Company ....	78	Kimberly-Clark Corp. ....	65		
Brooks and Porter Inc. ....	164	Knowlton, M. D., Co. ....	61	Scandia Manufacturing Co. ....	33
Brown Bag Filling Machine Co., Inc. ....	187			Scharder's A. Son ....	47
Burt, F. N., Co., Inc. ....	127	Lembo Machine Works, Inc. ....	196	Scientific Filter Co. ....	172
		Lerner Plastics, Inc. ....	179	Shaw Insulator Company ....	175
Cameo Die and Label Co. ....	154	Lowe Paper Company ....	30	Shellmar-Betner Flexible Packag- ing Division, Continental Can Company ....	Back Cover
Celanese Corp. of America, Film Dept. ....	151	Lynch Corp. ....	21	Standard-Knapp ....	74, 75
Celluplastic Corp. ....	14			Standard Packaging Corp. Inside Back Cover	
Champion Paper and Fibre Co., The ....	69-72	Manhasset Machine Company ..	163	Steigerwald, A. M., Co. ....	31
Champlain Company, Inc. ....	26	Markem Machine Company ....	160	Stocker Manufacturing Co. ....	48
Chase Bag Company ....	199	Mehl Manufacturing Co. ....	25	Stokes & Smith Company ....	211
Chicago Carton Company ....	68	Mercury Heat Sealing Equipment Co. ....	156	Stuyvesant Engineering Co. ....	164
Claremont Waste Mfg. Co. ....	191	Merit Displays ....	184	Sun Tube Corp. ....	24
Classified ....	208, 210	Miller, Walter P., Co., Inc. ....	73	Sylvania Division, American Vis- cose Corp. ....	205
Cleveland Container Co., The ....	35	Milprint Inc. ....	17		
Commercial Plastics and Supply Corp. ....	191	Minnesota Mining & Mfg. Co. ....	183	Taber Instrument Corp. ....	144
Continental Can Company 44, 45, 177 Shellmar-Betner Flexible Packag- ing Div. ....	Back Cover	Irvington Varnish & Insulator Div. ....	197	Technopol Laboratories Ltd. ....	58
Cottrell, C. B., & Sons Co. ....	6	Mostype Corp. ....	206	Thilmany Pulp & Paper Co. ....	186
Crown Cork & Seal Company, Inc. ....	18			Tite-Cap Machine Co. Inc. ....	172
		Nashua Corp. ....	82	Tri-State Plastic Molding Co., Inc. ....	11
Dale, John, Limited ....	80	National Can Corp. ....	9	Tupper Corp. ....	20
Dewey and Almy Chemical Co. ....	189	National Starch Products Inc. Inside Front Cover			
Dixie Wax Paper Company ....	169	New Jersey Machine Corp. ....	193	Union Carbide and Carbon Corp., Bakelite Company ....	46, 185
Dobeckmun Company, The ....	5	Niemand Bros. Inc. ....	158	Union Bag & Paper Corp. ....	41
Dow Chemical Company, The ....	171	Nox-Rust Chemical Corp. ....	173	U. S. Automatic Box Machinery Co., Inc. ....	16
du Pont de Nemours, E. I., & Co., (Inc.), Film Dept. ....	37			United States Envelope Co. ....	180
Cel-O-Seal Section ....	141	Ohio Boxboard Company, The ..	28		
Durethane Corp. ....	209	Olive Can Company ....	15	van der Meulen, G., & Zn. N. V. ....	194
		Oliver Machinery Co. ....	169	Varigraph Co., Inc. ....	188
Economic Machinery Co., Div. of Geo. J. Meyer Mfg. Co. ....	42	Owens-Illinois Glass Company 120, 121		Visking Corp., The ....	54, 55
Empire Box Corp. ....	81			Vlehek Tool Company, The ..	64
Ever Ready Label Corp. ....	187				
				Wirz, A. H., Inc. ....	147
Fisher's Foils Ltd. ....	39, 40				
Flexible Packaging Limited ....	66				
Flyndustries Inc. ....	166				
Foil Kraft, Inc. ....	167				
Gair, Robert, Co., Inc. ....	1				
Gardner Board and Carton Co., The ....	128, 129				
Gaylord Container Corp. ....	52				
Gering Products, Inc. ....	161				
Globe Heat-Seal, Inc. ....	150				

## MODERN PACKAGING

A BRESKIN  
Publication

Published by Modern Packaging Corp., 575 Madison Avenue, New York 22, N.Y.

Whatever the job...

printing  
plates

PERMACEL 64  
CLOTH TAPE

or  
dinner  
plates

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STRAPPING TAPE

# PERMACEL<sup>®</sup> TAPES

Find out how you can use self-sticking tape... write Permacel Tape Corporation, New Brunswick, N.J.

FEBRUARY 1954

213

## IMPULSE APPEAL



Vibrant color ... the sensory appeal of warm  
lightness ... the promise of convenience ...  
*THAT'S THE PLAXPAK® BOTTLE.*



## USE APPEAL



The infinite ease of a one-hand squeeze ...  
the perfect safety of unbreakability ...  
*THAT'S THE PLAXPAK BOTTLE.*



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## REPEAT APPEAL



A magnet at the point-of-purchase  
... an aid to your product at the  
point-of-use ... it sells, then resells ...  
*THAT'S THE PLAXPAK BOTTLE.*



The Plaxpak  
polyethylene bottle is  
packed with merchandising  
magic. And Plax alone has  
the experience to exploit  
this magic to its fullest  
in behalf of your product.  
Our packaging staff is  
at your service —  
For packaging that sells at the  
point-of-sale and resells at the point-of-use.



### PLAX CORPORATION

WEST HARTFORD, CONNECTICUT

IN CANADA: Plax Canada, Ltd., Toronto





Here's Flex-Vac's 57th packaging triumph!

this one for **HEINZ** dill pickles!

57



GENUINE dill pickles are back in the grocery store! Not in the old-time barrel, but in the new H. J. Heinz Company—Flex-Vac transparent vacuum package!

With the passing of the brine barrel, dill pickle devotees usually had to content themselves with a processed version, minus the brine that gives dill pickles their inimitable flavor. For years the H. J.

Heinz Company searched for a package that met these requirements—(1) convenient small unit, (2) preserve the product in brine, (3) product visibility, (4) sturdy, but light weight.

FLEX-VAC *vacuum* packaging provided the answer—transparent flexible packaging, holds brine perfectly; and with a *vacuum* that protects the product. Added to all these features was the fact that FLEX-VAC takes brilliant multi-color printing for brand identification.

Only FLEX-VAC'S broad experience in using already tested materials solved the problem—that same experience is yours to command!

If you have a packaging problem—no matter what product you package  
**TALK FIRST TO FLEX-VAC**  
for no one has a wider range of functional packaging materials to choose from—more experience in using already tested materials.

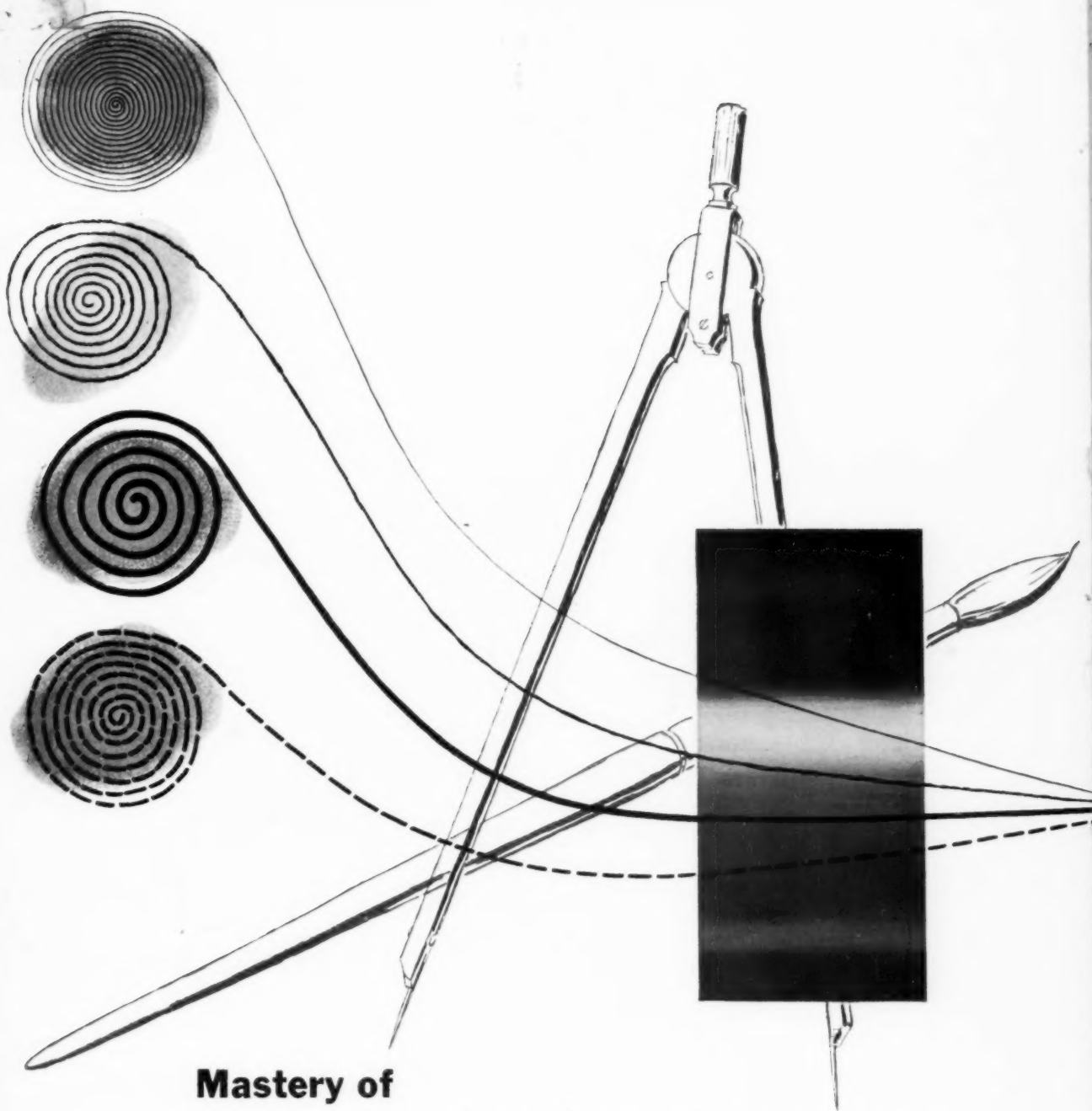


**STANDARD PACKAGING CORPORATION**  
**FLEX-VAC DIVISION**

Executive Offices: Chrysler Building, New York

Flex-Vac Sales

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The raw materials which Shellmar-Betner converts, fabricates and prints are many: plastic films, foils, and papers. To our work, we bring complete knowledge of their properties and characteristics—alone and in combination—and how each of them can best be imprinted to carry a merchandising message. This knowledge, won over many years, works for you—as it works for hundreds of package buyers—whenever you call on Shellmar-Betner.

CONTINENTAL  CAN COMPANY



**SHELLMAR-BETNER**  
FLEXIBLE PACKAGING DIVISION

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